

Mathematics

By a group of supervisors

PARENTS' GUIDE

Interactive E-learning Application





Index of Theme 1

General notes for parents	2
How to use this guide?	8
Revision	10



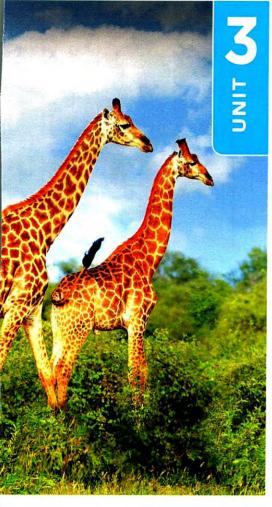
Place Value

Concept 1	Reinforcing Place Value	
Lessons 1&2	Big Numbers! – Changing Values	16
Lessons 3&4	Many Forms to Write Numbers – Composing and Decomposing	
Concept 2	Using Place Value	
Lessons 5&6	Comparing Big Numbers – Comparing Numbers in Multiple Forms	37
Lesson 7	Descending and Ascending Numbers	43
Lesson 8	Rounding Rules	50



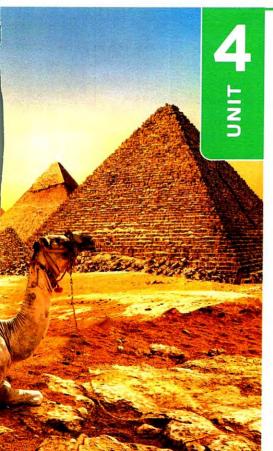
Addition and Subtraction Strategies

Concept 1	Strategies		
Lesson 1	Properties of Addition	60	
Lesson 2	Addition with Regrouping	66	
Lesson 3	Subtraction with Regrouping		
Concept 2	Solving Multistep Problems		
Lesson 4	Bar Models, Variables and Story Problems		
Lesson 5	esson 5 Solving Multistep Story Problems with Addition and Subtraction		



Concepts of Measurement

Concept 1	Metric Measurement	
Lesson 1	Measuring Length	90
Lesson 2	Measuring Mass	10
Lesson 3	Units of Capacity	
Concept 2	Measuring Time	
Lessons 4&5	Units of Time - Elapsed Time	114
Lesson 6	Applications of Measurement 11	
Lesson 7	Applications of Measurement 2	133



Area and Perimeter

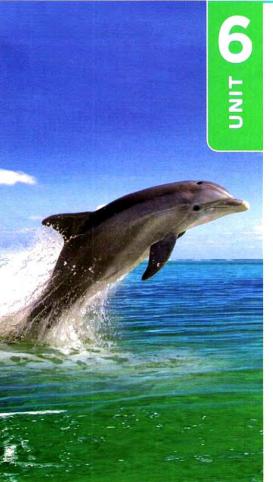
Concept 1	Explore Area and Perimeter		
Lesson 1	Finding Perimeter	142	
Lesson 2	Finding Area	149	
Lesson 3	Unknown Dimensions	156	
Lesson 4	Complex Shapes	163	

Index of Theme 2



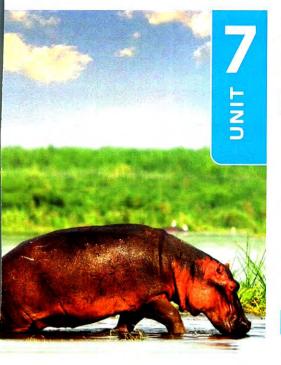
Multiplication as a Relationship

Concept 1	Multiplicative Comparisons		
Lesson 1	Multiplicative Comparison 172		
Lessons 2&3	Creating Multiplicative Comparison Equations - Solving Multiplicative		
	Comparison Equations 17	78	
Concept 2	Properties and Patterns of Multiplication	n	
Lessons 4&5	Commutative Property of Multiplication - Identity Property and the Zero Property 18		
Lessons 6&7	Associative Property of Multiplication - Applying Patterns in Multiplication 19		



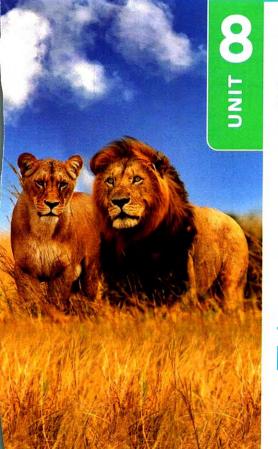
Factors and Multiples

Concept 1	Understanding Factors	
Lessons 1&2	Identifying Factors of Whole Numbers - Prime and Composite Numbers	204
Lesson 3 Greatest Common Factor (G.C.F)		214
Concept 2	Understanding Multiples	
Lessons 485 Identifying Multiples of Whole Numb Common Multiples		222
Lesson 6	Relationships between Factors and Multiples	230



Multiplication and Division : Computation and Relationships

Concept 1	Multiplying by 1-Digit and 2-Digit Factors		
Lessons 1&2	The Area Model Strategy - The Distributive Property	238	
Lessons 3&4	The Partial Products Algorithm - Multiply by a One-Digit Number		
Lesson 5	Multiply a Two-digit Number by a Multiple of 10		
Concept 2	Dividing by 1-Digit Divisors		
Lesson 6	Exploring Remainders		
Lesson 7	Patterns in Division 20		
Lesson 8	The Area Model and Division 27		
Lessons 9&10	The Partial Quotients Algorithm - The Standard Division Algorithm27		
Lesson 11	Division and Multiplication 28		



Order of Operations

Concept 1	

Order of Operations

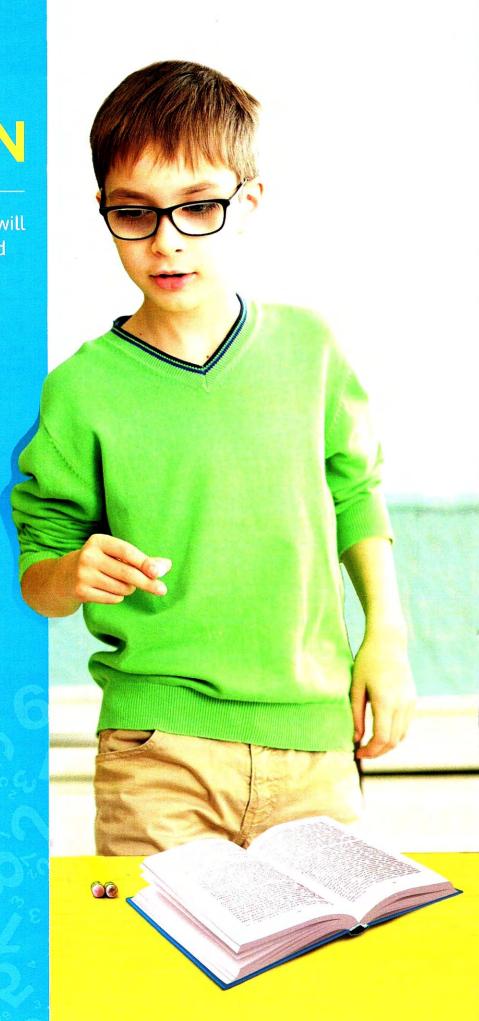
Lessons 1&2

Order of Operations -The Order of Operations and Story Problems

294



In this revision your child will review on what he/she had learned in primary three.



Revision 1

1. Complete.

- a. 32,621 + 18,709 =
- **b.** 30 thousands = hundreds.

c. The perimeter of the rectangle 2 cm is — cm.

d. The place value of the digit 4 in the number 46,385 is

e. Thirty-eight thousand, five hundred two in standard form is -

2. Choose the correct answer.

a. 35 ÷ 7 =

A. 5

B. 6

C. 7

6 cm

D. 8

A. 3,829

B. 8,293

C. 30,829

D. 3,928

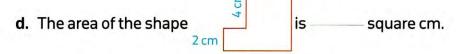
c.
$$8 \times = [8 \times 5] + [8 \times 2]$$

A. 10

B. 3

C. 8

D. 7



4 cm

6 cm

A. 30

B. 28

C. 24

- **D.** 20
- e. The greatest number formed from 7, 2, 0, 6, 8, 1 is

A. 870,621

B. 876,210

C. 102,678

D. 780,621

3. Arrange the following numbers from least to greatest.

56,210 , 506,021 , 650,201 , 171,000 , 43,692

4. Find.

a. 7,263 _4,081

Revision 2

Choose the correct answer.

- **a.** 54,275 32,938 = -
 - **A.** 12,337
- **B.** 21,373
- **C.** 21,733
- **D.** 21,337

- **b.** 501,326 <
 - **A.** 510,200
- **B.** 501,236
- C. 51,623
- **D.** 56,632

- c. 3 × 80 = _____
 - A. 24
- **B.** 240
- **C.** 2,400
- **D.** 24,000

- **d.** $\frac{1}{7}$ of 28 = ---
 - **A.** $\frac{1}{8}$ of 32
- **B.** $\frac{1}{5}$ of 30
- C. $\frac{1}{6}$ of 48
- **D.** $\frac{1}{9}$ of 18

e. The perimeter of the square



- **B.** 25
- C. 10
- **D**. 30

2. Complete.

- a. Eight hundred sixty-three thousands, five hundred seven in standard form is
- b. The place value of the digit 7 in 762,435 is

d.
$$= 100,000 + 7,000 + 30 + 5$$



3. A factory produces 800 cans of soft drink every day.

How many cans the factory produces in a week?

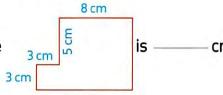
- 4. Write the greatest number and smallest number can be formed from 9, 4, 0, 3, 1, 6.
 - The greatest number : The smallest number : -

Revision 3

1. Complete.



b.
$$[5 \times 6] \times 7 =$$



2. Choose the correct answer.

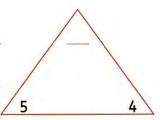
c.
$$= 1,000 + 900 + 70 + 2$$

3. Arrange the following from least to greatest.

$$5 \times 12$$
 , 7×8 , 3×10 , 6×9 , 8×1

4. Bassem has 72 marbles, he wants to put each 8 marbles in a bag.

5. Find the product. Write the fact family.



THEME ONE

Number Sense and Operations

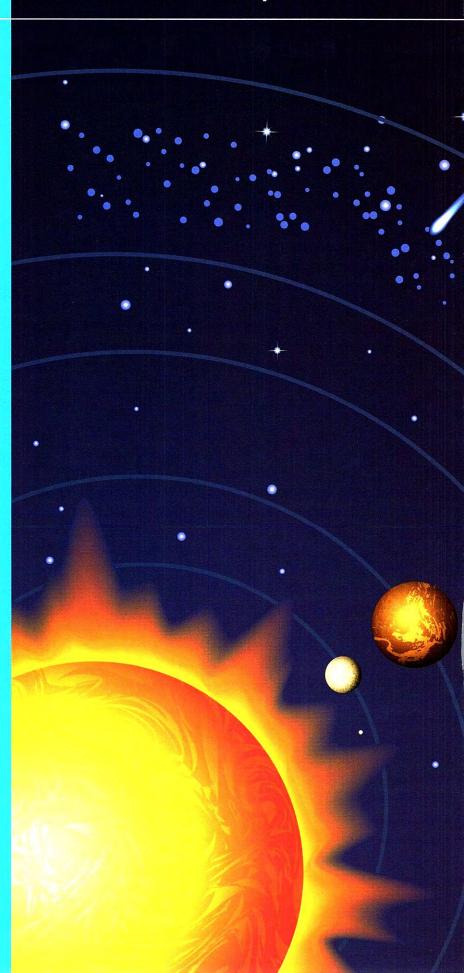
HIND |

Place Value

- ► Concept 1 : Reinforcing Place Value
- ► Concept 2 : Using Place Value

Fast Facts

- ► The distance between the Earth and the Sun is about 149,598,000 km.
- ► The least distance from the Earth to the Moon is about 384,402 km. which equals 384,402,000 m.



Concept

Reinforcing Place Value

Lesson No.	Lesson Name	Learning Objectives
Lessons 1&2	Big Numbers!	 Students will identify all whole number place values through the One Milliard place. Students will explain how the value of a digit changes based on its place in a number.
	Changing Values	 Students will explain how the value of a digit changes as it moves to the left in a whole number. Students will describe patterns they observe in changing place values.
Lessons 3&4	Many Forms to Write Numbers	• Students will write numbers in standard, word, and expanded forms .
	Composing and Decomposing	• Students will compose and decompose number in multiple forms .

Lessons 1&2

- ▶ Big Numbers!
- Changing Values

Remember The place value

The value of each digit in any number depends on its place in this number.

For Example:

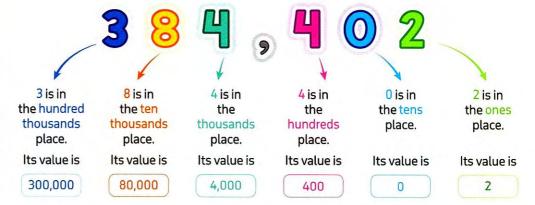
The least distance from the Earth to the moon is 384,402 km.

Notice the value of each digit in the number 384,402.

PERIOD —			+ PE	RIOD	
THOUSANDS		0	NES		
Hundreds	Tens	Ones	Hundreds	Tens	Ones
3	8	4	4	0	2

Note that:

Each group of three digits is called a period. Each period has ones, tens and hundreds in it.



Example

Write the place value and the value of the colored digit.

a. 79,283	
b. 980,758	
c. 29,510	
d. 220, <mark>0</mark> 89	

place value

Solution 🕎

	place value	value
a. [thousands	9,000

b. tens 50	
)

C.	ten thousands	20,000

d.	hundreds	0

Notes for parents:

Let your child remember that the position of a digit in a number determines its value.

Learn 1 Really big numbers

Million

- You know that the greatest 6-digit number is 999,999.

 The number which comes just after 999,999 is 1,000,000. It is read as one million which is the smallest 7-digit number.
- To show 1,000,000 in the place-value chart, a period for Millions has to be added to the left of the Thoudsands period.

PE	RIOD -		PE	RIOD -		+ PERIOD				
MIL	LIONS		THOU	JSAND	S	ONES				
Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones		
		1	0	0	0	0	0	0		

Written as: 1,000,000

Read as: One million

More about millions

Egypt population in 2020 was 102,334,404 look at this number on the place-value chart.



	PERIOD		1	PERIOD		PERIOD —				
N	ILLION:	S	TH	IOUSAN	DS	ONES				
Н	Т	0	Н	T	0	Н	T	0		
1	0	2	3	3	4	4	0	4		
Hundred Millions place	Ten Millions place	Millions place	Hundred Thousands place	Ten Thousands place	Thousands place	Hundreds place	Tens place	Ones place		

This number read as:

One hundred two million, three hundred thirty-four thousand, four hundred four.

or in a short way: 102 million, 334 thousand, 404

Math tip

The place-value chart helps you read greater numbers. You say:
"102" then at the comma you name the period,
"million".

[•] Help your child apply and extend understanding of the place value system to multi-digit whole numbers.

Example 2

What is the place value and the value of each underlined digit?

583,460,905

583,460,905





Place value : Ten Millions

Value: 80 million **Or**: 80,000,000

Place value: Ten Thousands
Value: 60 thousand

Or: 60,000

Place value : Millions

Value: 3 million Or: 3,000,000 Place value : Tens

Value: 0 ten Or: 0

Milliard (Billion)

China has the world's largest population. In 1980, the population of China reached about 1,000,000,000. It is read as one milliard (or one billion).

To show 1,000,000,000 in the place-value chart, a column for Milliards has to be added to the left of the Millions period.



	PE	RIOD -		PE	RIOD -		PE	PERIOD -		
MILLIARDS	MIL	LIONS		THOL	JSAND	5	ONES			
Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	Hundreds	Tens	Ones	
1	0	0	0	0	0	0	0	0	0	

Written as: 1,000,000,000 Read as: One milliard

Notes for parents:

Ask your child to tell you the value and the place value of each digit in the number: 243,019,507.

More about milliards

The world's population in 2020 was about 7,794,798,739 Look at this number on the place-value chart.

<u>⊢</u>	P	ERIOD -		P	ERIOD -	PERIOD —			
MILLIARDS	MILLIONS			THO	USAND	S	ONES		
0	Н	Т	0	Н	Т	0	Н	Т	0
7	7	9	4	7	9	8	7	3	9

This number read as:

Seven milliard, seven hundred ninety-four million, seven hundred ninety-eight thousand, seven hundred thirty-nine.

or in a short way:

7 milliard, 794 million, 798 thousand, 739



In the number 3,418,079,265, what digit is in the:

- a. Thousands place?
- b. Ten Millions place?
- c. Milliards place?
- d. Hundred Thousands place?





a. 9

b. 1

c. 3

d. 0

How to read a large number?

- Divide the number (from right to left) into "periods" each period contains 3 digits.
- 6,208,196,318
- Use the place-value chart to help you read the large number.

-	P	ERIOD -		P	ERIOD -	-	PERIOD —			
MILLIARDS	MI	LLIONS		THOUSANDS			ONES			
0	Н	T	0	Н	Т	0	Н	Т	0	
6	2	0	8	1	9	6	3	1	8	
6 milliard	208 million		196 thousand			318				

[·] Help your child use periods to read multi-digit numbers in an easy way.

Start from the left and read the number in each period followed by the period name as follows.

Reading

6,208,196,318

Six milliard, two hundred eight million, one hundred ninety-six thousand, three hundred eighteen.

In a short way: 6 milliard, 208 million, 196 thousand, 318

Example 4

Choose the correct answer.

- - A. 43,509,458
- **B**. 403,590,548
- C. 4,103,905,484
- D. 4,950,854
- 2. Four million, nine hundred fifty thousand, eight hundred fifty-four =
 - **A.** 43,509,458
- **B.** 403,590,548
- C. 4,103,905,484
- **D.** 4,950,854
- 3. Forty-three million, five hundred nine thousand, four hundred fifty-eight = -
 - **A.** 43,509,458
- **B.** 403,590,548
- C. 4,103,905,484
- D. 4,950,854

4. 403 million, 590 thousand, 548 =

1. 4 milliard, 103 million, 905 thousand, 484 =

- A. 43,509,458
- **B.** 403,590,548
- C. 4,103,905,484
- **D.** 4,950,854

Solution [V]



1. C

2. D

3. A

4. B

check your understanding

- In each of the following numbers.
 - underline the digit in the Hundred Thousands place.
 - circle the digit in the Ten Millions place.
 - draw a square around the digit in the Milliards place.
 - **a.** 7,561,492,048
- **b.** 3,914,500,721
- 2. Read the following numbers.
 - a. 912,031,301

- **b.** 70,804,230
- c. 5,003,521,216

Notes for parents:

Ask your child to write a number through milliard and then ask him/her to read it loudly.

Learn 2 Changing place values

- The value of a digit changes as it moves to the left within a number.
- Our place-value system is based on tens.

Each place value in this system is 10 times the one to the right of it.



	~ 1					
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
2	2	2	2	2	2	2
2,000,000	200,000	20,000	2,000	200	20	2

×10 ×10 ×10 ×10 ×10

- A digit in one place equals 10 times the digit in the place to its right. For Example: The Hundreds place is 10 times the Tens place, so the value of 2 changes from 20 to 200.
- Observe the pattern in the number of zeroes.

Example 5

Fill in the blanks below.

- a. The value of the digit 3 in the number 7,431,210 is ___
- **b.** The value of the digit 0 in the number 560,444,218 is __
- c. The value of 7 in the Hundreds place is _____
- d. is 10 times one hundred thousand.
- e. 30 tens equals
- f. 7,000 thousands = ____ millions.



Solution [V



a. 30,000

b. 0

c. 700 [think: $7 \times 100 = 700$]

d. 1,000,000

- **e.** 300 (think: $30 \times 10 = 300$)
- f. 7 (think: 7,000 thousands = 7,000,000)
- · Let your child understand that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right.

Check your understanding

- 1. Fill in the blanks below.
 - **a.** The value of the digit 5 in the number 1,578,416,112 is _____
 - **b.** The value of the digit 3 in the number 30,560,210 is _____
 - c. is 10 times three hundreds.
- 2. What is the value of each of the following.

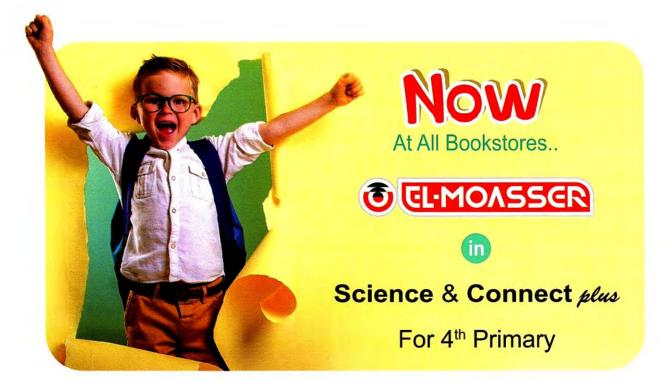
a.	8 in the	Tens place	?

b. 5 in the Ten Thousands place?

c. 400 tens?

d. 60 thousands?

3. How does the value of 5 change as it moves from the Hundreds place to the Thousands place?



Notes for parents:

· Help your child solve the questions of "check your understanding".

PROBLEM SOLVING

From the school book

1. Complete the table as in the example.

		MILLIARDS	MILLIONS			THO	DUSAI	NDS	ONES		
	Number	0	Н	Т	0	Н	T	0	Н	T	0
Ex.	5,604,453,987	5	6	0	4	4	5	3	9	8	7
a.	8,714,326,518			_					-		
b.	753,009,300		-	-							
c.	7,354,621									-	
d.	8,000,300	-				-				,—	
e.	923,508		-			-	-				-

-				0.000	- W	
2.	In the number	1,542	,345,6/8	, What digit	: is ir	n the

- a. Tens place?_____
- c. One Thousands place?
- e. Ten Millions place?
- **b.** Hundreds place?_____
- d. Hundred Thousands place?
- f. One Milliards place?
- 3. Write the value of the underlined digit according to its place in each number as in the example.
 - ► Example. 47,209,531 → 40,000,000
 - **a.** 58,486,098 ----
 - **c.** 62,478,300 ----
 - e. 24,041,683 ---
 - **g.** 41,691,403 _____
 - i. 669,084,422 ---
 - k. 30,30<u>3</u>,333 _____

- **b.** 3,784,168,411 ----
- **d.** 462,417 _____
- f. 8,000,418,617 ---
- **h.** 321,428,218 ---
- j. 7,261,909 ---
- l. <u>2</u>,100,841,621 —>

m. 7,623,102,481 --->

REMEMBER

o. 5,555,555

n. 714,291

p. 61,230,478

[El-Monofia - Shebin El Koum 22]

4. Complete.

a. The place value of the digit 2 in the number 2, 500, 000 is ______ [Souhag 23]

b. The place value of the digit 3 in the number 1, 365, 854 is ____

[Giza - Abo El-Nomros 23]

c. The place value of the digit 3 in the number 23, 174, 265 is

[Giza - 6th October 22]

d. The place value of the digit 4 in the number 748, 263, 501 is ____

e. The place value of the digit 0 in the number 5, 321, 041, 758 is

f. The value of the digit 5 in the number 346, 251, 813 is _____ [Cairo 23]

g. The value of the digit 6 in the number 26, 715, 324 is [Cairo - Math's Inspection 23]

 h. The million is the smallest number formed from ____ _ digits.

The milliard is the smallest number formed from _____

j. The smallest number formed from the digits 9,7,6,8,3,1 and 4 is $_$

k. The smallest number formed from the digits 4, 2, 6, 0, 7, 5, 1 and 3 is _____

The greatest number formed from the digits 8,1,3,4,5,0,9,7 and 2 is

m. The greatest number formed from 7 digits is _

Complete.

a. 75,421,392 = _____ million, _____ thousand, ____

b. = 701 million, 7 thousand, 700

c. 2,500,422,300 = _____ milliard, ____ million, ____ thousand, ___

d. = Two million, five hundred thousand, four hundred twenty-two.

e. = 9 milliard, 9 million, 9 thousand, 9

f. = 27 million, 27 thousand.

g. = Sixteen milliard, sixteen.

- 6. Fill in the blanks as in the example.
 - ► Ex. 23,8ØØ = 238 hundreds.
 - 60 tens = 600
 - **a.** 56,000 = _____ thousands.
 - **c.** 25, 600 tens = _____ thousands.
 - e. 55 thousands = ____ hundreds.
 - **g.** 72,000 tens = _____ thousands.
 - i. 32,000 = _____ thousands.
 - i. 80 tens = _____
 - **k.** 30 tens = _____
 - **l.** 40 tens = _____
 - **m.** 60 thousands = _____
 - **n.** The value of 50 thousands = _____
 - o. The value of 2 in the Tens place = _____
 - **p.** The value of 7 in the Hundreds place = _____

- 75, ØØØ
- 750 hundreds = 75 thousands.
- **b.** 280,000 = _____ hundreds.
- d. 300 thousands = ____ hundreds.
- f. 850 thousands = ____ hundreds.
- **h.** 87,900,000 hundreds = _____ millions.

[El-Kalyoubia - Math's Inspection 23]

[El-Menia official lang. School 23]

[Cairo - El-Shrouk 23]

[Cairo 23]

[Alexandria - Montaza 23]

7. Amir says that in the number 222, all of the digits have the same value.

Do you agree or disagree? Use words and numbers to explain your thinking.

- 8. Fill in the blanks.
 - a. _____ is 10 times one hundred thousand.
 - b. _____ is 10 times two hundred.
 - c. _____ is 10 times seven thousand.
 - d. Hundred thousand is _____ times ten thousand.



9. Dhoose a digit between 1 and 9. Use this number to complete the charts.

MILLIARDS	ARDS MILLIONS THOUSANDS				ONES				
0	Н	Т	0	Н	T	0	Н	Т	0
						-		_	-

- My digit is
- Value of my digit in the Ones place
- Value of my digit in the Tens place
- Value of my digit in the Hundreds place
- Value of my digit in the Thousands place
- Value of my digit in the Ten Thousands place
- Value of my digit in the Hundred Thousands place
- Value of my digit in the Millions place
- Value of my digit in the Ten Millions place
- Value of my digit in the Hundred Millions place
- Value of my digit in the One Milliards place

Challenge

- 10. Use the digits 5,7,3,1,8,2,9 and 6 to make the greatest number you can, then use the same digits to make the smallest number you can.
 - The smallest is The greatest is
 - How did the value of 7 change from the greatest number and the smallest number? Why did it change? Use words and numbers to explain your thinking.



Multiple Choice Questions

Choose the correct answer.

1.		digit 7 in the number 5,72 B. Hundred thousa			(Cairo - Math's Inspection 2. D. Thousand
2.	The place value of number 85,623 is	the digit 6 in the (El-Kalyoubia 23)	the	n the place va	of a country is 56,724,033, alue of the digit 6 is (Matrouh 22 ousands
	A. ThousandsC. Hundreds	B. TensD. Ten thousands		Millions Ten Millions	
4.	The state of the s	in number 56,724,033	5. The	value of dig	git 7 in number 7,125,801
		eira - Math Inspection 23)			eheira - Maths' Inspection 23
	A. 4	B . 40		7	
	C . 400	D . 4,000	C. 7	7,000	D . 7,000,000
6.		in number 2,476,217		vhich numbe ight hundre	er does the 8 have a valu
	A . 60	B . 600	A. !	538,419	B. 781,015
	C . 6,000	D . 60,000	C. 2	271,825	D . 419,782
8.	The value of the dig	git 0 in the number		value of the	e digit 5 in the number
	A. 0	B . 100	A. 5	millions.	B. 50 millions.
	C . 1,000	D. 100,000	C. 5	0 thousand	s. D. 500 thousands
10.	The period of the u the number <u>25,613</u> ,		thou		4,042, the digit 4 in the ual to times the is place.
					(Cairo - Maths Inspection 22
	A. Milliards.	B. Millions.	A. 1	0	B. 100
	C. Thousands.	D. Ones.	C. 1	,000	D . 10,000
12.	The number in which	ch the digit 7 has the			one space to the left on hart, its value equals
	A. 821,730,521	B. 152,007,000		times.	
	C . 51,078,623	D . 7,810,521	A. 1		B. 10
	The section of		C. 1		D . 1.000

Lessons

- Many Forms to Write Numbers
- Composing and Decomposing

Learn 1 Many ways to write numbers

The distance between Jupiter and the sun is about 778, 340, 821 km.



Place-Value Chart

M	MILLIONS			OUSAN	IDS	ONES		
Н	Т	0	Н	Т	0	Н	Т	0
7	7	8	3	4	0	8	2	1

Standard Form: 778, 340, 821

"Commas are used to show periods"

Expanded Form: 700,000,000 + 70,000,000 + 8,000,000

+300,000+40,000+800+20+1

"Zeroes are not needed in expanded form because there is nothing in that place value; as 0 in Thousands place".

Word Form: Seven hundred seventy-eight million, three hundred forty thousand, eight hundred twenty-one.

"Commas are used to separate Millions, Thousands and Ones periods".

Short-Word Form: 778 million, 340 thousand, 821.

Notes

- We use standard form most often.
- Numbers written in expanded form show the value of each digit.

Notes for parents:

· Your child may be confused about how to represent a place value with a 0 digit in expanded form. For example: 30,456 = 30,000 + 400 + 50 + 6. The 0 is not represented in expanded form because in standard form the 0 represents that there is nothing in that place value.



Example

Write each number in standard form.

- a. 9,000,000,000 + 300,000,000 + 20,000,000 + 600,000 + 400 + 30
- b. Three milliard, six hundred million, five hundred forty thousand, six hundred fifty.

Solution [V]

a. 9,320,600,430

b. 3,600,540,650

Example 2

Write each number in word form.

- a. 4,008,011,091
- **b.** 60,000,000+7,000,000+200,000+40,000+500+10+3

Solution [V]

- a. Four milliard, eight million, eleven thousand, ninety-one.
- **b.** Sixty-seven million, two hundred forty thousand, five hundred thirteen.

Example 3

Write each number in expanded form.

- a. 1,300,040,005
- **b.** 50,600,204

Solution [V]



- a. 1,000,000,000+300,000,000+40,000+5
- **b.** 50,000,000+600,000+200+4



check your understanding

Complete.

- a. 5,000,000,000+70,000+1,000+40+9=(in standard form)
- (in standard form) **b.** Fifty-eight million, thirty-seven thousand, fourteen = -
- (in word form) **c.** 3,300,030,303 =
- **d.** 7,608,490 = (in expanded form)
- · Your child may struggle to say large numbers and need to be reminded to group the numbers into periods as he/she reads them aloud.
- Remind your child to use commas when writing numbers in the word form.

Learn 2 Composing and decomposing numbers

- Composing numbers means (put together), and decomposing numbers means (broken apart).
- You can decompose the number 5, 456, 387 in different ways using place-value chart:

MILLIONS			T	HOUSAND	S	ONES		
Н	T	0	Н	Т	0	Н	T	0
		5	4	5	6	3	8	7

▶ 1st way: Expanded Form:

$$5.456.387 = 5.000.000 + 400.000 + 50.000 + 6.000 + 300 + 80 + 7$$

▶ 2nd way:

$$5,456,387 = [5 \times 1,000,000] + [4 \times 100,000] + [5 \times 10,000] + [6 \times 1,000] + [3 \times 100] + [8 \times 10] + [7 \times 1]$$

Example 4

Complete the following.

a. Composed: 8,035,402,176

Decomposed:

b. Composed:

Decomposed: $[7 \times 1,000,000] + [9 \times 100,000] + [8 \times 1,000] + [2 \times 10] + [5 \times 1]$

Solution 🕎

- a. **Decomposed**: $[8 \times 1,000,000,000] + [3 \times 10,000,000] + [5 \times 1,000,000] + [4 \times 100,000] + [2 \times 1,000] + [1 \times 100] + [7 \times 10] + [6 \times 1]$
- b. Composed: 7,908,025

Check

Check your understanding

Complete the following.

a. Composed:7,504,092,415

Decomposed:

b. Composed:

Decomposed:
$$(3 \times 1,000,000,000) + (2 \times 100,000,000) + (5 \times 10,000,000) + (4 \times 100,000) + (7 \times 10,000) + (8 \times 1,000) + (6 \times 10) + (9 \times 1)$$

Notes for parents :

- Make sure that your child knows the difference between the terms compose and decompose.
- Make sure that your child knows how to represent a zero in a place when the number is decomposed.

Exercise 2 on lessons 3&4

- ► Many Forms to Write Numbers
- ▶ Composing and Decomposing

	● REMEMBER ● UNDERSTAND ○ APPLY ♣ PROBLEM SOLVING	From the school book
1.	. Write each number in standard form.	
0	a. Four hundred and nine.	[El-Monofia - Quesna 22]
	b. 34 million , 97 thousand.	[Giza - Kerdasa 22]
	c. Three million, two hundred fourteen thousand, nine	hundred thirty-six.
		[El-Menia - Samalot 22]
	d. Five hundred twenty-seven million, nine hundred the	ousand , six hundred forty.
	e. Three milliard, four hundred two million, seventeen.	
	f. 20,000 + 7,000 + 400 + 20 + 2.	
	g. 70,000,000 + 126,000 + 450.	[El-Menia - Der Mawas 22]
	h. 1,000,000,000 + 400,000,000 + 3,000,000 + 20 +	5.
	i. 700,000,000 + 30,000 + 1,000 + 500 + 40.	
2.	. Write the expanded form of each of the following.	
	a. 50,391	
	b . 740,821	
	c. 1,756,300	
	d. 54,632,405	
	e. 701,462,051	
	f. 9,989,791,985	
	g. 35 million, 17 thousand, 230	
	h. Two milliard, four hundred twenty million, three hund	dred fifty-two thousand, one

Write each number in word form.

a. 567,421

b. 3,562,504

c. 54,213,450

d. 5,408,921,002

e. 700,000+60,000+20+9

f. 5,000,000,000+7,000,000+900,000+3,000+20

g. 900,000,000+60,000,000+6,000,000+40,000+600+5

h. 5,000,000,000+700,000,000+30,000,000+800,000+9,000+10+7

Complete the table.

	Standard Form	Word Form	Expanded Form
a.	7,340,509,012		
b.	-	Nine million, five thousand, one hundred fifteen.	
c.			4,000,000 + 300,000 + 90,000 + 5,000 + 700 + 20 + 1
d.	3,003,003	-	

Decompose the following numbers using expanded form.

a. 170,392 = ----+

b. 105, 208 = ----+

c. 601, 207 = [El-Menia 2022]

d. 2 million, 277 thousand, 191 = —

e. 17 million, 230 thousand, 14 = -

f. Three milliard, one hundred thirty-seven million, six hundred nineteen thousand, eighty-eight =

6. 🛄 Fill in the missing numbers. Use the place-value chart to help you.

a. Composed: 6,124,030,420

Decomposed:

MILLIARDS	RDS MILLIONS THOUSANDS				IDS	ONES			
0	Н	Т	0	Н	Т	0	Н	T	0
-				_				_	

	_			
h	Cor	nn	200	1
U.	CUI	HU	JSt	:u

Decomposed:

MILLIARDS	N	ILLION	IS	TH	OUSAN	IDS		ONES	
0	Н	T	0	Н	Т	0	Н	Т	0
5	4	0	0	1	5	9	0	2	4

c. Composed:

Decomposed : $(7 \times 1,000,000,000) + (5 \times 10,000,000) + (4 \times 10,000) + (3 \times 1,000) + (5 \times 100) + (9 \times 1)$

MILLIARDS	M	IILLION	IS	TH	OUSAN	IDS		ONES	
0	Н	Т	0	Н	Т	0	Н	Т	0
					_	-			

7. Complete the table.

	Composed	Decomposed
a.	4,040,400	
b.		(2 × 1,000,000,000) + (5 × 1,000,000) + (6 × 100,000) + (7 × 1000) + (9 × 100) + (2 × 10) + 7
c.		9,000,000 + 50,000 + 3,000 + 700 + 60 + 9
d.	9,210,031,458	

8. Complete the following.

- **a.** 700,005,009 = seven hundred , five , nine.
- **b.** 4,030,400,050 = _____ milliard, ____ million, ____ thousand, ____
- c. 417,900,770 = _____ seventeen million, nine hundred _____, ____ seventy.
- **d.** 2,100,080,005 = _____ milliard, one _____, eighty ____, five.
- e. 52,376 = fifty two _____, three hundred _____ = ____ + 2,000 + ____ + 70 + ____
- f. 3,000,000 + 8,000 + 400 + 30 + 3 = [Alexandria First Montaza 23]
- g. The standard form of the number 1 million, 235 thousand and 789 is (Souhag 23)
- **h.** 7,625 = 5 + 7,000 + 20 + [Aswan 23]

Challenge

- 9. Write 16 ten thousands + 5 thousands + 64 tens in standard form.
- 10. Find two 9-digit numbers with the difference between them is one million.

and —



Multiple Choice Questions

Choose the correct answer.

- The number building of the number: 9,231,043,204 is called _ form.
 - [Aswan 23]

[Cairo 23]

- A. decomposed
- B. standard
- C. expanded
- D. word
- **A.** 18,605,000
- C. 1,860,500
- [Alexandria El-Montaza 22] **B.** 81,605,000
 - **D.** 18,650,000

- The standard form of 5 million, 36 thousand and 206 is
 - A. 5000,036,206
- **B.** 5,036,206
- C. 532,206
- D. 5,360,206
- 4. The standard form of the number: 2 million,

2. What is the standard form of eighteen

million, six hundred five thousand?

- 175 thousand, 302 is
- **B.** 200,175,302

(Aswan 23)

- A. 3,021,752 C. 2,175,302
- **D.** 302,175,200

- 5. The number 2 million, 300 thousand in standard form is_ [El-Kalyoubia 23]
 - A. 2,300,000
- **B.** 2,000,300
- C. 2,300
- **D.** 2,003,000
- The standard form for the number three
 - hundred seventy is __ [Cairo - El-Shrouk 23]
 - A. 390
- **B.** 380
- C. 370
- D. 360

- Eighteen million, six hundred five
 - thousand = _
- [El-Beheira 23]
- A. 1,860,500
- **B.** 18,605,000
- C. 18,605
- **D.** 18,650,000
- 8. The number 1 milliard, 235 million, 127 in
 - standard form = _ [Cairo - Al-Tebeen 22]
 - **B.** 1,235,127
 - C. 1,272,351

A. 1,235,000,127

D. 1,235,127,000

The expanded form of the number 7,215,603 is

[Alex. - Borg El-Arab 22]

- A. 3+60+5,000+10,000+200,000+7,000,000
 - **B.** 3 + 60 + 500 + 1,000 + 20,000 + 700,000
 - C. 3 + 600 + 5,000 + 10,000 + 200,000 + 7,000,000
- **D.** 3 + 600 + 5,000 + 1,000 + 200,000 + 7,000,000
- **10.** 300,000 + 40,000 + 5,000 + 500
 - +30+2=

(Aswan 23)

- A. 235,543
- **B.** 3,450,532
- C. 345,532
- **D.** 34,032
- 11. The number 173 million, 904 thousand, 562
 - in standard form is ____
 - **A.** 173,000,904,562 **B.** 173,940,562

[El-Dakahlia 22]

- C. 173,904,562
- **D.** 173,562,904

- 12. Which expression decomposes the numeral 50, 374 in expanded form?
 - **A.** 50,000 + 300 + 70 + 4
 - **B.** 50,000+3,000+70+4
 - C. 50,000 + 3,000 + 700 + 4
 - **D.** 5,000 + 300 + 70 + 4

- 13. Which is a compose to (7 × 10,000) +
 - $[2 \times 10] + [4 \times 1]$?
 - A. 724
- B. 70,240
- C. 7,024
- **D**. 70,024

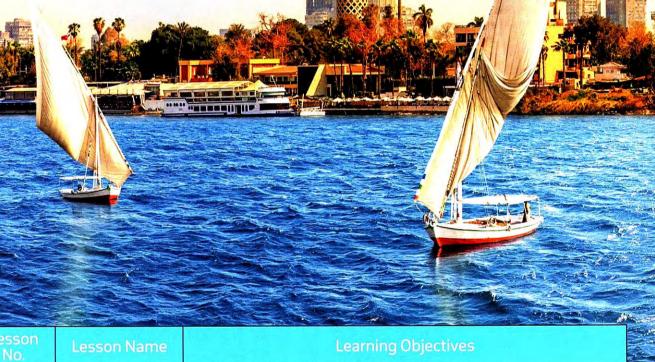
Concept

2

Using Place Value

Fast Fact

The Nile River is the longest river in the world. It has a length about (6,659 kilometers). Compare its length with the Amazon. The Amazon is about (6,400 kilometers) long.



Lesson No.	Lesson Name	Learning Objectives
Lessons 5&6	Comparing Big Numbers	 Students will use place value to compare large numerals. Students will use symbols to express numerical comparisons.
	Comparing Numbers in Multiple Forms	 Students will compare numbers in multiple forms. Students will describe strategies for comparing numbers in multiple forms.
Lesson 7	Descending and Ascending Numbers	 Students will order numbers in multiple forms. Students will describe strategies for ordering numbers in multiple forms.
Lesson 8	Rounding Rules	 Students will apply multiple strategies to round numbers. Students will discuss whether rounding or front-end estimation provide a more accurate estimate.

- Comparing Big Numbers
- Comparing Numbers in Multiple Forms

Learn

How to compare numbers?



When comparing numbers, the number which has more digits is the greater.

For Example: 5,302,200 > 899,529

because 5,302,200 has more digits than 899,529

Second Comparing numbers have the same number of digits

 You can compare two numbers with the same number of digits by starting at the left and moving right until you come to a pair of digits that do not have the same value.

For Example:

To compare 12,673 and 12,763. Start at the left. Check each place until the digits are different.



Compare the Ten Thousands.

12,673

same number of Ten Thousands

12,763

Step 2

Compare the Thousands.

12,673

same number of Thousands

12,763

Step 3

Compare the Hundreds.

12,673

7 > 6

12,763

Then 12,763 > 12,673

More Examples:

754,042 < 755,950

42,437 > 42,347

755,972 < 1,752,421

6,406,367
 6,406,367

Notes for parents:

· Ask your child to consider how many digits are in a number when he/she compares.



Example 1

Write (>, < or =) to compare.

- a. 37,048
- 37,184
- c. 4,010,065
- 4,000,056

- b. 217,906
- 271,906
- d. 810,340
- 810,340

Solution 🕎



- a. 37,048
- 37,184
- c. 4,010,065 > 4,000,056

- b. 217,906 < 271,906
- d. 810,340 = 810,340

Check your understanding

Write (>, < or =) to compare.

- a. 2,346
- 2,338
- c. 723,215
- 723,215
- **e**. 503,278,105

503,279,100

- **b**. 478,765
- 479,112
- d. 752,321,271
- 72,321,271
- f. 7,492,102,235

7,491,102,235



Notes for parents:

· If your child has difficulty making comparisons, let him/her first circle the place where the digits are different.

Learn How to compare numbers in multiple forms?

- You can compare numbers in any forms: standard, expanded and word form.
- You may convert to standard form to compare, or use place value in expanded form or in word form to compare.

Example 2

Write (>, < or =) to compare.

- 70,000 + 4,000 + 50 + 7a.
- 70,000 + 4,000 + 500 + 70
- Two milliard, seven hundred b. thirty-eight thousand, ten.
- Two milliard, seven hundred thirty-five thousand, eleven.
- 3,000,000 + 7,000 + 800 + 9C.
- Three million, seven thousand, eight hundred nine.
- $[7 \times 1,000,000] + [5 \times 100,000]$ d. $+ (3 \times 1,000) + (4 \times 100) + (9 \times 1)$
- 7,000,000 + 500,000 + 3,000 + 400 + 90

Solution [V]



a. <

- b. >
- c. =
- d. <

Check your understanding

Write (>, < or =) to compare.

- a. 500,000 + 70,000 + 90 + 8
- 1,000,000 + 5,000 + 1
- Three milliard, two hundred fiftyb. two thousand, three hundred four.
- Three milliard, two hundred fifty-two thousand, thirty-four.
- $[8 \times 1,000,000] + [6 \times 1,000] +$ C. $[5 \times 100] + [7 \times 10]$
- $[8 \times 1,000,000] + [2 \times 10,000]$ $+ [6 \times 1,000] + [5 \times 100] + [9 \times 1]$
- 2,000,000,000 + 400,000,000 d. +2,000+30+2
- 2,000,000,000 + 50,000,000 + 8,000,000 + 9,000 + 50 + 9

Your child may struggle with comparing numbers in word form or expanded form. He/she may convert to standard form to compare.

Exercise 3 on lessons 5&6

- ► Comparing Big Numbers
- ► Comparing Numbers in Multiple Forms

REMEMBER		○ APPLY ♣ PROBLEM SOLVING			From the school book						
1. Compare. Write (> , < or =).											
	a . 707	a. 707		770	b . 1,207		1,207				
	c. 10,5	c. 10,525		10,255	d . 190,	098		19,098			
	e. 💷 1	e. 123,568		123,978	f. 1116	f. 📖 6,235,678		6,235,508			
	g. 🚨 2,450,890,007		2,500,000,000	h. 7,79	8,562,415		7,798,567,999				
	i. 89,418,147		89,418,247	j. 571,	600,254		571,600,329				
	k. 1,00	0,000,000		900,000,000	l. 100	,000,000		99,999,999			
	m. 40,000		400 thousands	n. 7 te	n thousand:	5	7,000				
	o. 5,000		500 thousands	p. 9th	ousands		9,000				
	q . 7,10	0,600,200		8 milliards	r. 3 m	illiards		300 ten millions			
2. Compare. Write (> , < or =).											
•	а.	a. 7,000 mi		illions		7 milliards		iards			
	b. 14,6		17		10,000) + 4,00	+ 4,000 + 600 + 20				
	c. 5 milliards, 36		7 thousand		5,367,000,000		00,000				
	d. Ninety-seven millio					90,000,000 + 7,000,000 + 3,000 +					
	e. 🕮	5	,193,49	2,500		Five milliard, three hundred millio seven hundred fifteen thousand forty-three.					
	f. 🕮			- [4 × 10,000,000] 3 × 100] + [1 × 10]		70,000 + 9,000 + 600 + 40 + 3					
	g. 🚨 8,040,761			61,903		And the second s	4,000,000,000 + 400,000,000 + 00,000 + 60,000 + 1,000 + 900 + 3				

h. 4,000,000,000 + 5,000 + 1

4,000,000 + 70,000 + 10

17,420,605

j. 📖 Four hundred twenty-three thousand, twelve

400,000 + 30,000 + 2,000 + 20 + 1

3. Find each missing digit.

- a. 6,106 > 6 19
- d. 91,472 > 9 ,472
- g. 11,234 > 1 ___,785
- j. 179,00 < 179,001
- **b.** 2,117 = ___,117
- e. 114,899 < 114, 99
- h. 67,813 > 67,8 3
- k. 856, 34 < 856,134
- c. 4,382 < 4,3 \(\tag{2}
- f. 703,9 1 = 703,981
- i. 82, 88 = 82,588
- L 683,129 < 6 3,129

4. Write a number.

- a. Create a number that is less in the Hundred Thousands place than [<] 893,820
- b. Create a number that is greater in the Millions place than (>) 178,462,490

[Cairo - Heliopolis 23]

- c. Create a number that is less in the Ten Millions place than (<) 32,427,400
- d. Write a number in expanded form that is equal to [=] 2,445,232,197

Challenge

- 5. Describe the error in the following number sentence, and then explain how you would correct it. 24,152,614 < 24,125,614
- 6. Which is greater, the number that is 1,000 less than 13,495 or the number that is 10,000 less than 23,495?

Multiple Choice Questions

Choose the correct answer.

[El-Monofia - Sadat City 23]

A. >

45,678,124

[Alex. 23]

- 5. 100,000,040 -One hundred million, forty.
 - A. >
- B. <
- C. =
- 6. Which of the following statements is

TRUE?

[Cairo - Heliopolis 23]

- 7. Which number sentence is NOTTRUE?
 - **A.** 2,304 < 2,340
 - **B**. 27,920 > 27,790
 - C. 1,005,301 > 1,050,901
 - **D.** 80,044 < 80,404

- 8. Which of the following numbers is greater
 - than "3,000,000 + 500,000 + 300 + 70 + 2"?
 - **A.** 3,005,372
- **B.** 3,500,732
- **C.** 3,500,273
- **D**. 3,005,732
- 9. Which of the following numbers is less than "40 million, 900 thousand, 508"?
 - **A.** 49,000,508
- **B**. 40,900,508
- **C.** 40,009,580
- **D.** 40,900,580
- 10. Town A's library has three hundred sixty-two thousand, twenty-one books.

Town B's library has three hundred twenty-six thousand, one hundred two books.

Which choice below correctly compares the number of books in both towns' libraries?

A. 362,021 < 326,102

B. 326,102 = 362,021

C. 362,021 > 326,102

- **D.** 326,102 > 362,021
- [Cairo Heliopolis 22]

Descending and Ascending Numbers



Learn Ordering numbers

The table shows the population of four governorates in Egypt in 2021.

You can order the governorates by their population from greatest to least as follows:

1. The number 10,058,942 has the most number of digits, so it is the greatest number.



3	• Compare 5,452,718 and 5,510,876 which have	
	the same number of digits.	
	Check each place until the digits are different	



Governorate	Population
Cairo	10,058,942
North Sinai	450,528
Alexandria	5,452,718
Souhag	5,510,876

Step 1		Step 2	
Compare the Millions.		Compare the Hun	ndred Thousands.
5,452,718	same number of Millions	5, <mark>4</mark> 52,718	5 > 4
5 ,510,876		5,510,876	
	Then: 5,510,876	5,452,718	

From above:

10,058,942 > 5,510,876 > 5,452,718 > 450,528

In order of their population, the governorates are Cairo, Souhag,
 Alexandria and North Sinai.

Notes for parents:

• Remind your child to start comparison at the greatest place value.

Example i

Write these numbers in an ascending order.

2,896,016

1,188,580

2,517,550

Solution [V]



Step 1	Write the numbers, lining
Step 1	up places. Determine the
	smallest number.

2,896,016

1,188,580 ← smallest

2,517,550

Write the remaining numbers, lining up places. 2,896,016

2,517,550 ← smaller

Compare. Write the numbers from Step 3 least to greatest.

1,188,580

2,517,550

2,896,016

greatest.

Remember -

Ascending order is ordering numbers from least to

Example 2

Write each of the following numbers in standard form, then arrange them in a descending order.

- $(7 \times 1,000,000,000) + (4 \times 10,000,000) + (5 \times 1,000) + (3 \times 100)$
- Seven milliard, four hundred million, one thousand, two
- \bullet 7,000,000,000 + 500,000,000 + 600,000 + 300
- 745,300

Solution V



Standard form	Descendingly	
7,040,005,300	7,500,600,300	
7,400,001,002	7,400,001,002	
7,500,600,300	7,040,005,300	
745,300	745,300	



Descending order is ordering numbers from greatest to least.



Check your understanding

Arrange the following in a descending order, using the standard form.

- Three milliard, forty million, seventy-one thousand, ten.
- $(3 \times 1,000,000,000) + (5 \times 1,000,000) + (7 \times 1,000) + (1 \times 100) + (1 \times 10)$.
- \bullet 3,000,000,000 + 30,000,000 + 10

• 3,300,710,400

Notes for parents:

- · If your child has trouble ordering numbers, ask him/her to align the numbers vertically and compare digits from left to right.
- Remind your child about the meaning of the two terms ascending order and descending order.

Exercise 4

Descending and Ascending Numbers

	● REMEMBER ● UNDERSTAND ○ APPLY ♣ PROBLEM SOLVING	From the school book				
1.	Write the numbers in an ascending order.					
•	a . 8,092,561 , 9,208,111 , 7,534,786 , 8,650,336	[El-Beheira 23]				
	The order is:	- ,				
	b . 1,282,756 , 3,012,427 , 988,423 , 3,105,338	[El-Monofia - Sadat city 23]				
	The order is:	· , —				
	c. 430,000,459 , 43,000,549 , 403,000,456 , 430,549,000					
	The order is:,	, —				
2.	Write the numbers in a descending order.					
Ĭ	a. 450,321 , 504,321 , 321,405 , 342,150 , 540,312	[Giza 23]				
	The order is:					
	b . 6,562,942,735 , 6,942,735 , 6,562,942,375 , 6,942,537					
	The order is:,	- ,				
	c. 4,237,651 , 4,273,653 , 495,627 , 4,237,690					
	The order is:,,	- , -				
3.	List the following data in a descending order. You may use we • Three milliard, ten million, one thousand, thirty-four.	ord or standard form.				
	• Three milliard, one million, three hundred twenty-three thousand, t	three hundred ninety-one.				
	Three milliard, nine hundred ninety thousand, nine hundred ninety-two					
	Three milliard, one hundred ten million, ninety-nine thousand, for	our hundred ninety-three.				

4.	List the	following in	an ascending	order. Use	standard form	١.
----	----------	--------------	--------------	------------	---------------	----

a. . • 654,301

• Six hundred fifty-four thousand, three hundred ten.

• 604,320

• 654,311

Five hundred ninety-nine thousand, three hundred ten.

The order is:

- Three million, four hundred fifty thousand, three.
- 3,453,000

• 3,450,030

The order is:

5. List the numbers in a descending order. Use standard form.

- a. Two milliard, four million, seven hundred thousand.
 - 2,400,700,000

- 2,040,007,000
- · Three milliard.

The order is:

- $(6 \times 1,000,000,000) + (3 \times 10,000,000) + (5 \times 1,000,000) + (6 \times 10,000) + (9 \times 100)$
- Five milliard, forty-one million, seven thousand, ninety
- 6,000,000,000 + 40,000,000 + 5,000,000 + 10,000 + 7,000 + 90
- 6,025,060,990

The order is:

• 461,014	 Four milliard, six hundred thou 	isand forty.
• [4 × 1,000,000,000] + [4 ×	< 100,000] + [6 × 10] • 6,400,04	2
The order is:		
b. • Nine million, seven hundred • 90,731,007	d thirty-one thousand, seventy. • 900,080,500	
• 9,000,000 + 700,000 + 40,0		million, eighty-four.
The order is:		
a. • 900 thousand.• 5 million and 7 hundred thou	ng order. Use the form in which the • 9 million. ısand. • 550,223	
a. • 900 thousand.• 5 million and 7 hundred thou	• 9 million. • 550,223 nousand, four. nousand, forty.	g are given. (Giza - El-Haram 22
 a. • 900 thousand. • 5 million and 7 hundred thou The order is: b. • Four milliard, six hundred the • 461,014 • Four milliard, six hundred the 	• 9 million. • 550,223 nousand, four. nousand, forty.	

8.	Create a number that is greater than 980,622 and a number that is less than 980,622, then
•	write the three numbers in an ascending order.

The greater number is _____, the smaller number is _____

The order is: -

9. Create a number that is greater than 8,164,201,404 and a number that is less than

8,164,201,404, then write the three numbers in a descending order.

The greater number is _____, the smaller number is _____

The order is:

Challenge

10. The following numbers are arranged in a descending order:

If you replace each 6 by 9 and each 9 by 6, what do you notice?



Multiple Choice Questions

Choose the correct answer.

- 1. Which of the following shows the numbers in a descending order?
 - A. 580,735,757,573

B. 735, 508, 573, 757

C. 735,757,573,580

- **D.** 757,735,580,573
- [Giza Awseem 22]

2. Which of the following is a correct ascending order?

(Cairo - Heliopolis 23)

A. 757,573,508,735

B. 573,757,735,580

C. 573,580,735,757

- **D.** 580,573,757,735
- 3. Which choice shows the numbers in a descending order?
 - A. 1. 3,456,871
- B. 1. 7,456,232
- C. 1. 5,786,321
- D. 1. 1,263,572

- 2. 3,578,462
- 2. 6,785,000
- 2. 5,795,786
- 2. 12,213,573

- 3. 987,541
- 3. 6,670,785
- 3. 5,895,432
- 3. 4,262,563

- 4. 5,743,261
- 4. 5,700,726
- 4. 6,721,000
- 4. 1,000,000,000

- 5. 8,784,561
- 5. 5,700,624
- 5. 7,000,000
- 5. 7,865,321,000

- 4. Given the following numbers:
 - a [6 × 100,000] + [4 × 10,000] + [5 × 1,000] + [3 × 100] + [1 × 1]
 - b Six hundred fifty-three thousand, three hundred, ten.
 - c 604,302
 - d Five hundred eighty-eight thousand, three hundred, ten.

Which choice shows these numbers in an ascending order?

- A. a, c, b, d
- B. d, c, a, b
- C. d, b, a, c
- D. d, a, c, b
- 5. Which of the following digits makes the sentence true ? 785 > 7 5 > 755
- A. 2

B. 4

C. 6

- D. 8
- 6. The table below shows the average distances from the planets to the Sun.

Planet	Jupiter	Mars	Venus	Earth
Distance from the Sun in km	778,340,821	227,943,000	108,209,000	149,598,000

Which planet from above is nearest to the Sun?

- A. Jupiter
- B. Mars

- C. Venus
- D. Earth

8

Rounding Rules



Learn

Different ways to round a number

A roller coaster that is 2,181 meters long. About how long is the roller coaster?

Since you do not need an exact number, you can **estimate** by **rounding** the number.



Different Ways to round 2,181 to the nearest thousand.

Way 1 You can use (midpoint strategy).

2,181 is closer to 2,000 than to 3,000 3,000
So, round 2,181 to 2,000
Written as 2,181 \approx 2,000
and read as 2,181 approximately equals 2,000
2,500
2,181
2,181

Way 2 You can use (place value strategy)

Step 1 Step 2 Step 3 Find the place you Look at the • If the underlined digit is 5 or greater, round up. want to round to. digit to its right. Circle the digit in that Underline that • If the underlined digit is place. digit. less than 5, round down. • Change each digit to the right 2, 181 2,181 of the rounding place to 0 •1 is less than 5, so **Thousands** digit to 2,181 rounds to 2,000 place the right

Then, the roller coaster is about 2,000 meters long.

Notes for parents:

• Remind your child to round up if the digit to the right of the place value he/she wants to round to is equal to or greater than 5.

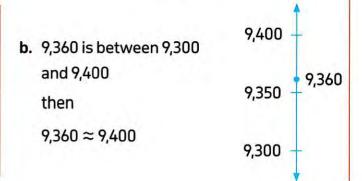
Example 1

Use the midpoint strategy to round each of the following.

a. 74,231 (to the nearest 1,000)



b. 9,360 (to the nearest 100)



Example 2

Use the place value strategy to round each of the following.

74,000

- a. 2,618 (to the nearest 10)
- c. 3,697,852,721 (to the nearest Ten Million)
- e. 999,999 (to the nearest Ten Thousand)
- **b.** 174,568 (to the nearest 10,000)
- d. 7,556,462 (to the nearest Million)
- f. 13,999,999 (to the nearest Hundred)

Solution [V]



a. $2,618 \approx 2,620$

4<5 **b.** 174,568 ≈ 170,000

7>5 c. $3,697,852,721 \approx 3,700,000,000$ 5 = 5

d. $(7),556,462 \approx 8,000,000$

9>5 **e.** $999,999 \approx 1,000,000$

f. $13,999,999 \approx 14,000,000$

Rounding Rule:

Circle the digit, look next door. 5 or higher? Add one more. 4 or less? Let it rest.

Remember

The digits to the right become zeroes.

When you round a 9 to the next greater digit, remember to regroup to the next place value.



check your understanding

Round the following.

to the nearest a. 85,721 1,000

c. $3,895 \frac{\text{to the nearest}}{\text{Hundred}}$

- **b.** 3,562,291 $\frac{\text{to the nearest}}{\text{Ten Thousand}}$
- to the nearest

If necessary, allow your child to write the standard form of the number before rounding.

Rounding Rules

	• REMEMBER • UNDER	STAND OMPPLY	- PROBLEM SOLVING	III From the school book
1.	Round the numbers t	o the nearest T	en.	
0	a. 423≈ ———	b. 549 ≈	c. 495≈	d. 1,287 ≈ ———
2.	Round the numbers t	o the nearest H	undred.	
0	a. 874≈———	b. 416≈	c. 4,398≈	d. 1,952 ≈ —
	Round the numbers t	o the nearest T	housand.	
	a. 8,090≈	-	b.	
	c. 9,900 ≈	-	d.	_
4.	Round the numbers t	o the nearest T	en Thousand.	
0	a. 37,205 ≈ ———		b. 58,936 ≈ —	_
	c.	-	d . 📖 7,435,026,35	3≈
	Round the numbers	o the nearest H	undred Thousand.	
0	a. 483,267 ≈ —	1	b. 678,090 ≈ —	
	c. 449,300 ≈ ———		d . 12,786,500 ≈ —	
6.	Round the numbers	to the nearest M	lillion.	
0	a. Щ 5,367,544 ≈ —		b. 20,843,267 ≈ —	
	c. 135,984,600 ≈		d . 🛄 2,453,000,6	01≈
	Round the number	ers to the neare	st Milliard.	
0	a. 5,266,747,023 ≈ —		b . 10,944,352,543	≈——
_		A. W. Sandaya V. L		

8. Round each number to the nearest Ten, Thousand, Hundred Thousand, and Million.

Numbers	Nearest Ten	Nearest Thousand	Nearest Hundred Thousand	Nearest Million
a.1,657,809				
b . 2,709,365				
c.16,442,896				
d. 8,851,342				

9. Complete.

- a. The number 543,186 to the nearest Thousand is -[Cairo - Heliopolis 22]
- b. The number 163,518,943 to the nearest Million is (Matrouh 22)
- c. The number 352,265 to the nearest Thousand is [Alex 23]
- d. The answer of rounding 32,582,346 to the nearest Million is

[Cairo - Al Khalifa and Al Mokattam 23]

 (to the nearest Ten Thousand) e. 34,279 ≈ —

[El-Monofia - Sadat city 23]

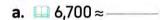
(to the nearest 100) f. 4,369≈

[Cairo - El Nozha 23]

—— (to the nearest Thousand)

[Alex - El Montazah 23]

10. Round each of the following by using the midpoint strategy, record the midpoint of the number line and the place of each number, then round to the nearest Thousand.



b. ■ 9,340 ≈

10,000

6,000

17,000

16,000

7,000

9,000

c. 16,401≈-

d. 19,654≈

20,000

19,000

11. Draw the number line, label the midpoint, and then round each of the following numbers.

- a. 250,000 (to the nearest Hundred Thousand)
- **b.** 1 700,500 (to the nearest Hundred Thousand)
- c. 362,261 (to the nearest Ten Thousand)
- d. 36,951 (to the nearest Hundred)

- 12. Write 5 numbers if rounded to the nearest Thousand the result is 312,000.
- 13. A runner ran 1,537 meters, but he discribes the distance he ran with a rounded number. Round 1,537 to the nearest Hundred.
- 14. A record number of 23,386 ants lives in colony A. Round this number to the nearest Ten Thousand.



Challenge

15. What is the greatest whole number that rounds to 300,000? What is the least?

Multiple Choice Questions

Choose the correct answer.

10. •	2,357≈ A. 2,360	— (rounding to the nearest T B. 2,358	enj. C . 2,350	(Giza 23) D. 2,400
46			X	CALL AND
	Hundred? A. 2,450	B . 2,551	C . 2,549	D. 2,499
9.		argest number can be rounded	to 2,500 when rounded to	the nearest
	C . 112,625	D . 20,789	C. 32,000,000	D . 33,000,000
	A. 125,678	B . 116,034	A. 30,000,000	B. 32,600,000
	Ten Thousand			
		n rounded to the nearest	32,302,340 to the ne	[Giza-Awseem 23]
7.		er colud be rounded to	8. Which answer repre	그리고 이번 하다면 아니라 아니는 국민 🐃 🐃 🐃
	C. 102,010	D. 12,090	C . 1,240,000,000	D . 1,250,000,000
	A. 100,000	El-Monofia - Berket El-Sabaa 23] B. 10,000	A . 1,220,000,000	B . 1,230,000,000
	Thousand is	and the state of t	rounded to the Ten	Millions place is
5. \circ		ntains 102,635 bees, the es to the nearest Ten	6. The number that sh	
		1000 A 10		
	A. 34,000 C. 30,000	B . 34,090 D . 35,000	C. 32,000,000	D . 33,000,000
	A 2/, 000	(El-Sharkia 22)	A . 30,000,000	B. 32,600,000
	ricarese rein		32,302,340 to the no	[Suez 22]
0	nearest Ten T	e number 34,089 to the	4. Which answer representation 32,582,346 to the new section 32,58	4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
-	AND THE RESERVE			
	A. 3,600 C. 3,000	B. 3,700 D. 3,620	C. 6,700,000,000	B . 7,000,000,000 D . 8,000,000,000
	is	[Souhag 23]	A . 6,000,000,000	P 7000 000 000
		st hundred, the result	Milliard.	[Beni Suef 22]
1.		kimating the number 3,629	2. Round 6,749,001,55	l to the nearest

Unit One Assessment



1. Choose the correct answer.

- A.3 B.4 C.7 D.8
- 2. Milliard is the smallest - digit number. (Cairo 23)
 - **A**. 5 **B**. 10 **C**. 9 **D**. 8
- 3. The place value of the digit 6 in 56,724,033 is _______ [El-Beheira-Math Inspection 23]
- A. Thousands. B. Hundred Thousand.
- C. Millions. D. Ten Million.
- 4. The value of the digit 3 in 53,496,752 is ______ (Aswan 23)
- **A.** 30 **B.** 30,000 **C.** 3,000,000 **D.** 300,000
- 5. Rounding the number 34,089 to the nearest Ten Thousand is —

(Cairo-Heliopolis 23)

- **A.** 34,000 **B.** 34,090 **C.** 30,000 **D.** 35,000
- **6.** Which is the compose to $[8 \times 100,000] + [4 \times 1,000] + [7 \times 100] + [1 \times 10]$?
- 0. Which is the compose to (0 × 100,000) if (4 × 1,000) if (7 × 100) if (1 × 10) if
- **A**. 804,710 **B**. 840,710 **C**. 804,170 **D**. 840,701
- **7.** 3,752,000 three milliard, twenty.
- A.> B.< C. =

2. Complete the following.

- 1. One million is the smallest number formed from digits. [Aswan 23]
- 2. The greatest number formed from the digits 2, 0, 5, 3 is _____
- [El-Monofia-Sers El-Layyan 23]
- 3. The value of the digit 4 in the number 3,452,631,901 is _____
- 4. 1,732,053,000 in word form is
- **5**. 80,000,000 + 124,000 + 650 =
- **6.** $735,462 \approx$ [Rounded to the nearest Ten Thousand]
- **7.** 3,504,800,501 in expanded form is —
- **8.** $5,856,469 \approx 5,900,000$ [Rounded to the nearest _____]



3. Choose the correct answer.

- 1. Which number rounded to 5,000,000 when rounded to the nearest Million?
 - A. 4,754,216
- **B**. 4,261,562
- C. 5,642,721
- D. 5,810,000

- 2. The largest 5-digit number is
 - A. 10,000
- **B**. 100,000
- C. 99,999

D. 98,765

- 3. 100,000 is _____ times the number 10,000
 - A. 10
- **B.** 100

C. 1,000

- **D.** 10,000
- 4. What is the standard form for three milliard, seven hundred thirty-five thousand, fifty?
 - A. 3,735,000,050
- **B**. 3,735,500
- C. 3,000,735,050
- **D.** 3,735,050
- 5. Rounding the number 765,017 to the nearest Hundred Thousand is
- [Alex.-Al-Agamy 23]

- **A.** 770,000
- **B**. 800,000
- C. 700,000
- **D**. 760,000

- **6.** $(5 \times 1) + (8 \times 100) + (4 \times 1000) + (1 \times 10,000) = -$
 - A. 14,805
- **B.** 10,485

C. 14,185

- D. 1,485
- 7. The place value of the digit 0 in the number 2,078,921 is
 - A. Hundred thousands

B. 0

C. Hundreds

D. Thousands

4. Answer the following.

- 1. A plane's altitude increased by 2,721 meters.

 Round this number to the nearest Hundred.
- 2. Use the digits 7,4,2,0,3,5,6,8 to make the greatest number you can.

 Then use the same digits to make the smallest number you can and round each number to the nearest Million.
- 3. Arrange in an ascending order, using the forms in which the numbers are written.
 - $(7 \times 1,000,000) + (5 \times 100,000) + (4 \times 1,000) + (2 \times 100) + (3 \times 10)$
 - Seven million, five hundred forty thousand, two hundred three.
 - \bullet 7,000,000 + 500,000 + 40,000 + 2,000 + 3

• 75,423

- Seven million, fifty thousand, thirty.
- 4. Compose and decompose the following number.

MILLIARDS	١	AILLION	S	TH	OUSAN	IDS		ONES	
0	Н	T	0	Н	T	0	Н	T	0
2	8	0	5	4	0	0	6	9	3

Composed:

Decomposed:

THEME ONE

Number Sense and Operations

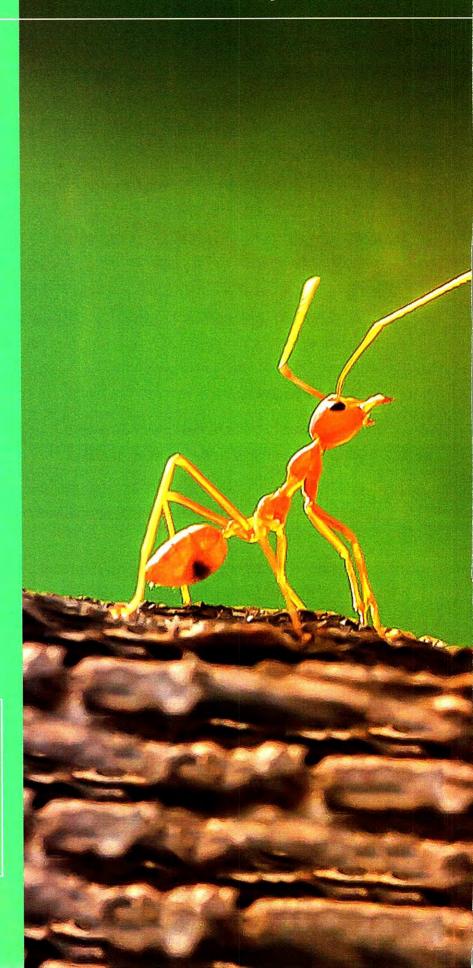
TIND

Addition and Subtraction Strategies

- ▶ Concept 1: Using Addition and Subtraction Strategies
- ► Concept 2 : Solving Multistep Problems

Fast Fact

There are over 12,000 ant species worldwide.
There are about 20,000 different species of bees in the world.
What is the difference between them ?!



Concept 1

Using Addition and Subtraction Strategies



Lesson No.	Lesson Name	Learning Objectives
Lesson1	Properties of Addition	 Students will identify the properties of addition and subtraction. Students will explain the properties of addition and subtraction. Students will investigate to determine whether addition properties apply to subtraction.
Lesson 2	Addition with Regrouping	 Students will add multi-digit whole numbers. Students will estimate to determine if their answer is reasonable.
Lesson 3	Subtraction with Regrouping	 Students will use place value to help subtract using the standard algorithm. Students will subtract with regrouping. Students will estimate to check the reasonableness of their answers.

1

Properties of Addition



Learn What are the addition properties?

Addition properties are rules for addition that are always true.

- Commutative property.
 - Identity property.
- Associative property.

Commutative Property of Addition

Sara has two boxes of apples. One of them contains 15 apples and the other one contains 10 apples How many apples are there in the two boxes?

Sara said

Ahmed said

$$15 + 10 = 25$$

$$10 + 15 = 25$$

So, you can note that 10 + 15 = 15 + 10



You can add numbers in any order and get the same sum.

Identity Property of Addition

Maged saw 8 fish. Shady did not see any. How many fish did the boys see in all?

If you add zero to any number, the sum is that number.

$$8 + 0 = 8$$

$$0 + 8 = 8$$

So, the boys saw 8 fish in all.

Associative Property of Addition

Bassem collected 7 brown shells, 4 white shells, and 6 gray shells. How many shells did he collect in all?

Parentheses []

So, [7+4]+6=7+[4+6]. show which numbers to add first.

You can group addends in different ways, and the sum will be the same.

Notes for parents:

 Let your child give you more examples for each property and ask him/her to explain what each property states.

Example 1

Find the missing number, and name the property you used.

Solution [V]

- a. 64 [commutative property]
- c. 11 [associative property]

- b. 14 (additive identity property)
- d. 0 (additive identity property)

Example 2

Solve each problem, and name the property you used.

a.
$$12 + 28 + 30$$

b.
$$16+9+4$$

c.
$$12 + 28 + 15 + 35$$

Solution [V]

a.
$$12 + 28 + 30$$
 Use the associative
= $[12 + 28] + 30$ property to group
= $40 + 30$ numbers that are

b.
$$16+9+4$$

= $16+4+9$ (commutative property)
= $[16+4]+9$ (associative property)

c.
$$12 + 28 + 15 + 35$$

$$= [12 + 28] + [15 + 35]$$
 [associative property]

Check your understanding

Complete the following.

c.
$$[14+16]+37=14+[16+---]$$

d.
$$17 + 23 = 23 + 17$$
 is _____ property.

e.
$$[136 + 13] + 37 = 136 + [13 + 37]$$
 is — property.

f.
$$968 + 0 = 0 + 968 = 968$$
 is _____ property.

Solve the problems, then name the property or properties illustrated by each problem [commutative, associative or additive identity].

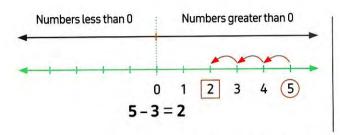
[•] Let your child know that he/she could use more than one property to solve a problem.

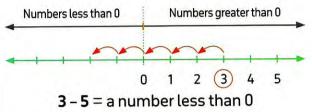
Do the addition properties apply to subtraction?

▶ Is 5 - 3 the same as 3 - 5?

You can use the number line to answer.

You will study the numbers less than 0 later in coming years.





From the above: $5-3 \neq 3-5$ [The differences are NOT the same]

You can not subtract numbers in any order and get the same difference.

So, commutative property of addition *does not apply* to subtraction.

▶ Subtraction has no identity.

There is no number you can subtract from any number, or subtract any number from it, the difference is that number.

▶ Is [5-3] - 2 the same as 5 - [3-2]?

$$= 0$$

$$5 - (3 - 2) = 5 - 1$$

= 4

From the above : $(5-3)-2 \neq 5-(3-2)$ [The differences are NOT the same]

You can not group in different ways, and the difference will be the same. So, associative property of addition *does not apply* to subtraction.



Notes for parents:

Ask your child to create a subtraction problem to investigate if the addition properties apply to subtraction.
 Let your child explain using words.

Properties of Addition

UNDERSTAND

O APPLY

PROBLEM SOLVING

From the school book

1. Choose the correct property.

a.
$$[12+8]+7=12+[8+7]$$

b.
$$25 + 75 = 75 + 25$$

c.
$$[45+5]+10=45+[5+10]$$

[Additive identity - Commutative - Associative]

d.
$$13 + 0 = 13$$
 (Giza - Ab

d.
$$13 + 0 = 13$$
 [Giza - Abo El-Nomros 23] [Additive identity - Commutative - Associative]

e.
$$26 + 10 + 34 = 26 + 34 + 10$$

2. Complete.

b.
$$[61 + 23] + 24 = -----+ [23 + 24]$$

Complete to find the sum.

a.
$$92 + 321 + 8 = 92 + 8 + 321$$

b.
$$1+16+4$$

c.
$$199 + 1 + 40$$

d.
$$\square$$
 5+7+8+3

$$=5+8+7+3$$

4. Solve the following problems using the associative property. Remember to solve what is in the parentheses first.

a.	[75 + 25] + 46	75 + (25 + 46)	(75 + 46) + 25
	= 100 + 46 = 146	=	=
b.	[10 + 4] + 20 + 17	10 + [4 + 20] + 17	10 + 4 + (20 + 17)
	=	=	=
c.	[820 + 78] + 12 + 80	820 + (78 + 12) + 80	[820 + 80] + [78 + 12]
	=	=	=

5. Find each sum in two different ways. Use parentheses to show which numbers you add first.

a.
$$30 + 70 + 15$$

c.
$$220 + 88 + 80$$

b.
$$11 + 26 + 34$$

d.
$$12 + 28 + 30 + 25$$

6. Use the properties of addition to solve each problem.

c.
$$421+9+29$$

d.
$$342 + 4 + 8 + 46$$

Challenge

7. Yahia needs to find the sum of 24, 35, 105 and 66.How can he group the addends to make it easier to add?Write the property used in each step.





Multiple Choice Questions

Choose the correct answer.

[Assiut - Manfalout 22]

- A. Assocciative
- C. Additive identity

- B. Commutative
- D. None of the above

[El-Beheira 23]

- A. Commutative
- C. Associative

- B. Additive identity
- D. Otherwise

[Alex. - El-Montaza 23]

A. 3

B. 2

C. 0

D. 1

A. 24

B. 25

C. 99

D. 100

[El-Fayoum 22]

A.
$$635 + 492 = 492 + 635$$

C.
$$[18 + 2] + 16 = 36$$

A. additive identity

B. commutative

C. associative

7. Which equation would be best to include in an explanation of the commutative property of addition?

[El-Menia - Matay 22]

A.
$$8 + 0 = 8$$

C.
$$3+18=3+11+7$$

B.
$$7+8=8+7$$

D.
$$5+8=3+10$$

Addition with Regrouping



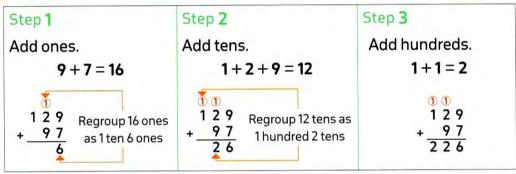
Learn

Mr. Faried has 129 kids toys. He plans to buy 97 more toys. How many toys will he have altogether?

Add. 129 + 97



Estimate. 100 + 100 = 200 [Numbers are rounded to the nearest 100]



Mr. Faried will have 226 toys, and the answer is close to the estimate. So, 226 is reasonable.

Example 1

Round the addends to the nearest given estimation. Find the sum.

Solution [V]

Round to
$$\begin{array}{ccc}
1 & 10 \\
3 & 4 & \longrightarrow & 3 & 0 \\
+ & 8 & 8 & \longrightarrow & + 9 & 0 \\
\hline
1 & 2 & 2 & 1 & 2 & 0
\end{array}$$

The answer is reasonable.

b. Round to
$$658 \xrightarrow{100} 700$$
 $+135 \xrightarrow{793} +100$
 800

The answer is reasonable.

c.

Round to

1,000

5, 1 9 5

$$+3, 7 6 1$$
 $+3, 7 6 1$
 $+4, 0 0 0$
 $+3, 7 6 1$
 $+4, 0 0 0$

The answer is reasonable.

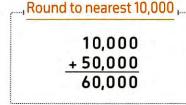
Notes for parents:

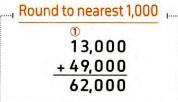
• Ask your child to find the sum of 3,659 and 1,783, then use rounding to estimate and check if the answer is reasonable or not.

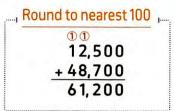
Example 2

Estimate using rounding to the nearest Ten Thousand, Thousand, Hundred and Ten to check the reasonableness of the answer. Find the exact answer.

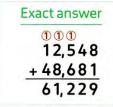














Note

The exact answer is more reasonable to estimation using rounding to the nearest Ten than rounding to the nearest other place values.



check your understanding

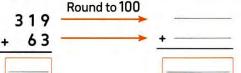
1. Find the sum with regrouping.

a.

b.

2. Find the exact sum. Estimate using rounding to check the reasonableness of the answer.

a.



C.

b.

d.

C.

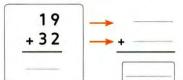
· Let your child create an addition problem and let him/her solve it to find the exact answer, then use rounding to check the reasonableness of the answer.

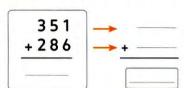
Addition with Regrouping

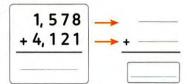
REMEMBER

- UNDERSTAND
- O APPLY
- PROBLEM SOLVING
- From the school book
- 1. Estimate using rounding to the nearest Ten. Find the exact answer.

a.

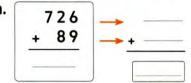


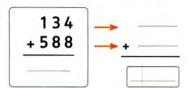




2. Estimate using rounding to the nearest Hundred. Find the exact answer.

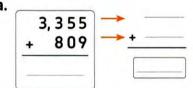
a.

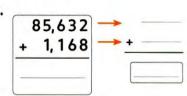




3. Estimate using rounding to the nearest Thousand. Find the exact answer.

a.



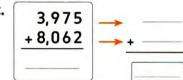


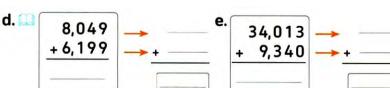
- 4. Round to estimate the sums. Then, solve the problems to find the exact answers.
- Show your work.

a.

b. 🛄

C.





5. Find the exact sum. Estimate using rounding as the examples.

- Examples: 5,432 + 1,296 = 6,728 5,400 + 1,300 = 6,700
- a. 17 + 69 = -+-=-
- c. 4,584 + 2,428 = --+----
- e. 25,749 + 175,684 = ---+---=-
- **q.** 123,965 + 986,035 = -----+--=-

- \bullet 17,686 + 5,342 = 23,028 1111 17,690 + 5,340 = 23,030
 - **b.** 523 + 387 = --+--=--
 - **d.** 69,210 + 26,428 = ----**+**----=---
 - f. 259,111 + 9,999 = ___+__=_
 - **h.** 58,712 + 81,475 + 42,358 = __+__+__=

6. Complete.

- a. 91,024 + 32,549 = -
- **b.** 539 + 62 = ---
- **c.** 668 + 235 = ---
- **d.** 8,049 + 2,931 = ---
- e. 26,720 + 45,280 = ---
- f. 16,473 + 39,124 = ---

- [El-Beheira Hosh Essa 23]
 - [Alex. First Montaza 23]
 - [El-Kalyoubia 23]
 - [Aswan Noba 23]
 - [Giza 23]
 - [Souhag 23]

7. Find the sum. Compare using (>, < or =).

- a. 65 + 17
- 38 + 43
- c. 3,984 + 1,079
- 894 + 4,117
- e. 90,652 + 21,911
- 37,888 + 84,675
- **b.** 290 + 530
- 732 + 88
- **d.** 5,182 + 957
- 3,777 + 2,350
- **f.** 54,186 + 11,983
- - 25,649 + 40,515

8. Answer the following problems.

a. Ahmed and Omar participated in a project, Ahmed paid 342,650 pounds and Omar paid 245,950 pounds.

Find the total cost of the project.

[Alex. - Al Agamy 23]

b. Mazen bought a laptop for 8,250 L.E. and a mobile for 5,750 L.E. How much money did Mazen pay?

(Giza 23)

c. Heba bought a mobile for 21,675 L.E. and a laptop for 18,325 L.E. How much money did Heba pay?

[Cairo 23]

- d. If 273 ships passed through the Suez Canal in January and 375 ships crossed in February., find the total sum of ships in the two months.[El-Menia 23]
- e. A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?



[Cairo - 23] [El-Beheira - Damnhour 22]

f. The country has provided a vaccination against the Corona virus. In the first stage, 1,653,465 people were vaccinated and 3,312,447 in the second stage. What is the total number of people vaccinated in both stages?



(Giza - Dokki 22)

- 9. Round to estimate the sum. Then solve the problem and find the exact sum. Show your steps.
 - a. Sandra collected 139 cans to recycle. Hani collected 242 cans.

How many cans were collected?

Round to the nearest Ten.



Estimate:			
Exact:			

b. In a week, 6,923 tourists visited Karnak Temple, and in the next week, 7,679 tourists visited it. How many tourists visited the temple in the two weeks?

Round to the nearest Ten.

Exact:



c. Abeer and Ehab are traveling from Aswan to Alexandria. They will travel 514 km on the first day to Asyut. They will travel 597 km from Asyut to Alexandria on the second day. How many kilometers will they travel in all?

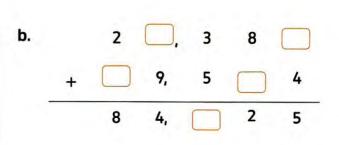


Estimate:	
Exact:	

Challenge

10. Complete the missing digits.

a.		7	<u> </u>	3	4	
_	+		2,		2	5
		9	8,	6		8



Multiple Choice Questions

Choose the correct answer.

- 1. Which one is the sum of + 269?
 - A. 117
- **B.** 118
- C. 621

D. 622

- 2. 165 + 142 =
 - A. 207
 - **C**. 307
- **B**. 23
- **D.** 18

[Alex. - El Montazah 23]

- **3.** 6,199 + 8,049 = ____
 - A. 41,248
- **B.** 14,428
- C. 14,248
- D. 4,428

(Aswan 23)

- **4.** 91,024 + 32,549 = ____
 - **A.** 123,563
- **B**. 123,673
- **C.** 122,563
- **D**. 123,573

(Giza - Haram 22) (Cairo - Rod El Farag 23)

- 4,568
- 5. Which one is the sum of ± 2.715 ?
 - A. 2,253
- B. 6,283
- C. 7,273
- **D**. 7,283
- 58,607 6. Which one is the sum of + 24,654 ?
 - A. 83,053
- **B.** 83,261
- C. 83,361
- D. 83,853

- **7.** 3,425 + 4,768 = 193 + -
 - A. 8

- **B**. 80
- C. 800
- **D**. 8,000
- **8.** 31,632 + 62,435 =
 - A. 67 + 94
- **B.** 67 + 940

71,147 + 7,765

- C. 67 + 9,400
- **D**. 67 + 94,000

- Which one is the correct rounding to estimate the answer of 192 + 266?
 - **A.** 100 + 200 = 300
 - **B.** 200 + 200 = 400
 - **C.** 100 + 300 = 400
 - **D.** 200 + 300 = 500

- Which one is the correct rounding to estimate the sum of 1,564 + 387?
 - **A.** 1,500 + 300 = 1,800
 - **B.** 1,500 + 400 = 1,900
 - **C.** 1,600 + 400 = 2,000
 - **D.** 1,600 + 500 = 2,100
- 11. Which has the same sum as 654 + 1,698?
 - A. 519 + 1,832
- **B.** 1,394 + 958
- **C.** 1,863 + 571
- **D.** 754 + 1,898
- **12.** 78,912
 - A. >
 - B. <
 - C. =
- 13. Heba bought a laptop for 13,350 pounds and a TV set for 8,750 pounds.
 - What is the total money did she pay?
 - A. 21,000 pounds
 - C. 22,100 pounds

- **B.** 21,100 pounds
- **D.** 23,000 pounds

Subtraction with Regrouping



Learn

A factory produced 3,675 cartons of juice in a month. In the next month, the factory produced 7,869 cartons of juice.

Find the difference between the number of cartons of juice in the two months.

Subtract. 7,869 - 3,675



Estimate. 8,000 - 4,000 = 4,000

(Numbers are rounded to the nearest 1,000)

Use the standard subtraction algorithm.

Step 1

Subtract the ones.

Step 2

Regroup hundreds. Subtract the tens.

Step 3

Subtract the hundreds.

Step 4

Subtract the thousands.

So, the difference is 4,194 cartons of juice.

The answer is close to the estimate, so 4,194 is reasonable.

Note that:

7, 8 6 9
$$\xrightarrow{\text{Round to}}$$
 7, 9 0 0
- 3, 6 7 5 \longrightarrow - 3, 7 0 0

[It is more close to the exact answer]

7, 8 6 9
$$\xrightarrow{\text{Round to}}$$
 7, 8 7 0
- 3, 6 7 5 \longrightarrow - 3, 6 8 0
4, 1 9 4 4, 1 9 0

[It is more close to the exact answer than rounding to Thousand or rounding to Hundred]

Notes for parents:

· The exact answer is more reasonable to estimation using rounding to the nearest 10 than rounding to the nearest other place values.

Example 1

Find the difference. Round to the given estimation to check the reasonableness of the answer.

a. 531 - 278 [Round to the nearest Ten]

b. 7.419 - 1.742 [Round to the nearest Hundred]

Solution [V]

a.
$$4 \stackrel{12}{\cancel{2}} \stackrel{11}{\cancel{2}} \stackrel{\text{Round to } 10}{\cancel{5}} \stackrel{4}{\cancel{5}} \stackrel{13}{\cancel{5}} 0$$

[The answer is reasonable]

b.
$$6 \stackrel{13}{\cancel{3}} \stackrel{11}{\cancel{11}}$$
 Round to 100 $\stackrel{6}{\cancel{14}} \stackrel{14}{\cancel{14}} \stackrel{7}{\cancel{14}} \stackrel{1}{\cancel{14}} \stackrel{1}{\cancel$

[The answer is reasonable]

Example 2

Estimate using rounding to the nearest 10,100,1,000 and 10,000 to check the reasonableness of the answer. Find the exact difference. 46,853 - 19,729

Solution [V]



3 16

Round to nearest 10 🖳 📹 Round to nearest 100 📹 📹 Round to nearest 1,000 📹 🗃 Round to nearest 10,000

Exact difference

The exact difference is more reasonable to estimation using rounding to the nearest 10 than rounding to 100 , 1,000 or 10,000



check your understanding

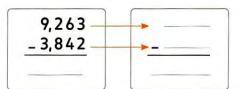
Solve the following problems using the standard subtraction algorithm. Then, round each number to the nearest Ten, Hundred Thousand or Ten Thousand to check the reasonableness of your answers.

Notes for parents:

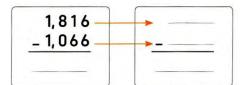
· Remind your child to look at each exercise carefully and decide how he/she needs to regroup before proceeding.

1. Use the standard subtraction algorithm to solve the problems. Then, round each number to the nearest Thousand to check the reasonableness of your answer.

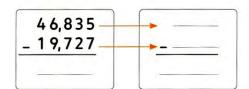
a.



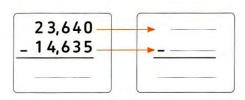
C.



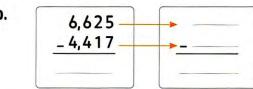
e.



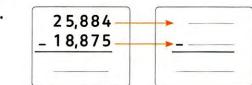
g.



b.



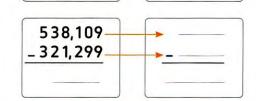
d.



f.



h.



2. Use the standard subtraction algorithm to solve the following problems. Then round to the nearest Thousands to check the reasonableness of your answer as the examples.

► Examples: •
$$5,2\%6 - 2,873 = 2,373$$

5,000 - 3,000 = 2,000

c. 7,326 – 5,296 = —

e. 238,763 – 18,764 = – _____

g. 542,302 - 281,976 = -

d. 70,623 – 30,611 = –

f. 853,004 – 45,878 = –

h. 721,010 – 350,891 = —

3. Complete.

a. 613 – 247 =

[Cairo - El-Nozha 23]

b. 8,617 – 1,769 =

(Cairo - El-Marg 23)

c. 2,324 – 1,324 = —

(Giza 23)

d. 4,725 – 3,482 = —

(Qena 23)

e. 284,615 – 106,392 =

[Cairo - Heliopolis 23]

f. 8,000 – 3,999 =

(Cairo 23)

g. 2,615 – 1,309 =

C-!-- D-4 FI F---- 22

h. 8,742 – 2,136 =

(Cairo - Rod El-Farag 23)

111 0/1/12 2/150

(Souhag 23)

i. 98,765 – 85,435 =

(Souhag 23)

4. Find the results, complete using (>, < or =).

a. 3,250 - 137

3,250 - 731

b. 7,431 – 250

9,302 - 250

c. 6,666 - 2,222

8,888 - 4,444

d. 849 - 598

1,000 - 750

e. 18,654 - 367

10,000 + 8,000 + 200 + 80 + 7

f. 12,926 + 19,809

57,400 - 24,865

5. Solve the following story problems.

a. A road of 675 km length. If a train traveled a distance of 239 km from this road.

What is the remaining distance of the road?

[El-Beheira 23] [Alex. - Montaza 23]

b. Hassan has 8,460 pounds. He bought a phone for 3,650 pounds.

Find the money remained with him.

[Alex. 23]

c. There are 7,258 ants in the colony. 2,147 ants are females and the rest are males.

How many males are in the colony?

(Souhag 23)

d. Samir and Mohamed participated in a project.
Samir paid 342,650 pounds. If the cost of the project is 668,500 pounds, how much is
Mohamed paying?
[El-Menia 22]



e. If the population of Matrouh Governorate is 517,901 people, and the population of South Sinai Governorate is 112,211, then what is the difference between the population of Matrouh Governorate and the population of South Sinai Governorate?



[El-Gharbia - Qotour 22]

[El-Monofia - Berket El-Sabaa 23]

f. Mohamed has 15,000 L.E. He bought a computer with 7,250 L.E. and a mobile with 4,750 L.E. Find the reminder with him.

[Cairo-El-Salam 23]



g. A trap jaw ant wanted to cross a river that was 3,548 cm across. The ant had already swum 1,672 cm. How much farther does the ant have to go?



h. III Two colonies of fire ant were stuck in a flood and made floating rafts to survive. The first colony had approximately 1,267 ants and the second had 3,452 ants. How many more ants were in the second colony?



i. 🚨 A fire ant colony has 255,000 ants. A Gigantiops destructor ant colony has 6,200 ants. What is the difference between the size of the two colonies?



Challenge

6. Write the missing digits.

-	

		ı

	- 0







Multiple Choice Questions



[Cairo 22]

2. Find the difference : __ 124,680

[Cairo - Al-Khalifa 23] [El-Beheira - Hosh Essa 23]

457,206

[Cairo 23]

(Aswan 23)

(Giza 23)

7. A local bakery sold 1,232 zalabya in one day. If they sold 876 zalabya in the moring, how many were sold during the rest of the day? [Beni Suef 22]

- A. 356
- **B.** 520

C. 1,588

D. 2,108

- A. 250
- **B.** 150

C. 100

D. 50

- 9. Salma solves this problem $\frac{-1,352}{2}$ What is her next step?
 - A. Add 2 and 5 in the tens place.
 - B. Subtract 5 from 2 in the tens place.
 - C. Regroup the tens place and subtract 5 from 12
 - D. Regroup the tens place and subtract 5 from 11

Concept

2

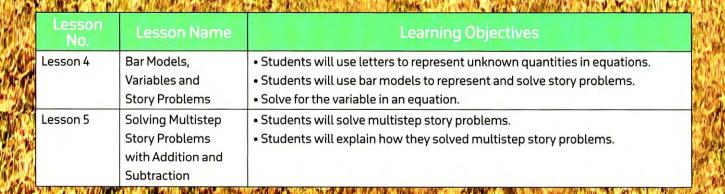
Solving Multistep Problems



Female kangaroos sport a pouch on their belly (made by a fold in the skin) to cradle baby kangaroos, called joeys.

If a female weighs 35 kg, and weighs holding her joey 38 kg.

What is the weight of her joey?



4

Bar Models, Variables and Story Problems

Learn **3**

How do you write a number sentence to solve a problem ?

Suppose you have 225 L.E. to spend. How much money will you have left if you bought the soccer socks?

		The state of the s
	1	
Soccer Gea	ar Sale!	
Soccer socks	90 L.E.	
Goalie gloves	120 L.E.	
Shinguards	225 L.E.	7
3		
	14. 470	- 1 / E



What strategy will you use?

Strategy: Write a Number Sentence using bar models.

[Where: n shows the money left]

Whole

有 进 进 直	225 L.E.
90 L.E.	n
Part	Part

1. From the bar model:

$$90 + n = 225$$

2. Subtract to find n

$$n = 225 - 90$$

n = 135

Answer: You will have 135 L.E. left.



Look Back and Check

Is your answer reasonable? 90 + 135 = 225 Yes, it checks.

Notes for parents:

 Ask your child: Why is subtraction used for this problem? He/she may answer "Subtraction is used because I need to find the part that is left".



How to use a bar model to solve an equation?

You can represent the number sentence:
 3+2=5 by the opposite bar model.

5	
3	2

• Study the following bar model and its facts:

	A
В	С

A = B + C

Add to find the whole.



Subtract to find a part

B = A - C



C = A - B

Subtract to find a part

Identifying the Main Idea

Identifying the main idea when you read in math can help you use the **problem-solving** strategy, and write a number sentence.

The main idea The main idea here is part-parthere is part-partwhole, with the whole, with one part whole unknown. unknown. Nader spent 7 L.E. Sally had 10 L.E. on Monday and 8 L.E. After she bought a book, on Tuesday. she had 4 L.E. left. What did the book cost? How much money did he spend in all on both days? 10 7 • Equation 7 + 8 = n• Equation n + 4 = 10Add to find the whole. Subtract to find a part. Part + Part = Whole Whole - Part = Part 10 - 4 = 7 + 8 = n

Notes for parents:

• If your child has trouble writing number sentences for problems, tell him/her to figure out the main idea in the problem, draw a picture for it, and then decide which operation it calls for.

Example 1

There are 5,526 bees in a hive.

In this hive 3,491 are males and the rest are females.

How many females in this hive?

Solution [V]

- The whole is: 5.526
- One part is: 3,491 [males]
- The second part is unknown: x [females]
- Bar model:

5,526	
3,491	×

- Equation : 3,491 + X = 5,526
- **Solution**: X = 5,526 3,491 = 2,035 females.

How to write a number sentence (or equation)

- Step 1 Show the main idea.
- Step 2 Decide which operation fits the main idea.
- Step 3 Use a letter to show what you are trying to find.
- Step 4 Solve the number sentence.

Note -

You can write many equations for this problem

$$3,491 + X = 5,526$$

$$5,526 - 3,491 = X$$

$$5,526 - X = 3,491$$

The value of x is the same.

Check your understanding

If the number of visitors of the Pyramids in one month is 183,523 and the number of foreign visitors is 38,191

, find the number of Egyptian visitors.

Bar model

Equation:

Solution:



Learn 2 Solving equations with variables

- An equation is a number sentence stating that two amounts are equal.
- A variable is a letter in the equation that you should find its value.
- Solving an equation means finding the value of the variable that makes the values of its two sides equal.

Example 2

Solve the equation by using a bar model: 14 - d = 8

Solution [V]



· Bar model:

1	4
d	8

• **Solution** : d = 14 - 8 = 6

Note

Subtract to find a part. Whole — Part = Part

Example 3

Solve the equation by using a bar model: y = 34,500 = 55,200

Solution [V



· Bar model:

У		
34,500	55,200	

• **Solution**: y = 34,500 + 55,200 = 89,700

Note

Add to find the whole. Part + Part = Whole



Solve the equation by using a bar model: 74,562 + m = 125,708

Solution [V



· Bar model:

125,	708
74,562	m

• **Solution**: m = 125,708 - 74,562 = 51,146



check your understanding

Solve the following equations.

a.
$$X + 54,600 = 87,623$$

c.
$$p - 4,252 = 31,726$$

b.
$$76,450 - m = 15,412$$

d.
$$13,725 + n = 70,000$$

Notes for parents:

· Ask your child to check his/her answer using fact family.

Exercise

on lesson 4

Bar Models, Variables and Story Problems

REMEMBER

			ND

O APPLY

From the school book

1. Find the value of each variable in the following part-part whole tables.

	X
34,750	19,051

C.

78	8,514
а	29,125

	121,725
10,714	У

	m
41,621	52,321

2. Solving equations with variables. Create a bar model to solve each of the following problems.

Bar model:

Solution:

b. m = 35,462 = 2,741

Bar model:

Solution: -

(Ismailia 23)

c.
$$\square$$
 b $-53,500 = 75,200$

Bar model:

Solution: -

d. l + 432,750 = 642,781

Bar model:



e.
$$\square$$
 725,625 + c = 935,075

Bar model:

Solution: -

f. \square 13,280 – d = 5,420

Bar model:



Solution: -



g.
$$722,561 - p = 720,231$$

Bar model:

Solution: -

Solution: -

Bar model:	
ou. moude.	

3. Complete.

a. In the opposite bar model, the value of b =

b 9,901 1,000

[Cairo - Al Khalifa and Al Mokattam 23]

b.	In the opposite bar model,

the value of the unknown C =

(2
3,425	5,274

[El-Dakahlia 22]

23	35
200	В

(Souhag 23)

$$\boldsymbol{\mathsf{d}}.\;$$
 In the opposite bar model ,

the value of the unknown C =

[Giza - Awseem 23]

the value of k =

[Alex. - Al Agamy 23]

f. In the equation
$$G + 710 = 930$$
, the value of G is equal to

(Cairo - El-Kobba 22)

(Souhag 22)

h. The value of the variable in the equation
$$K - 1,235 = 2,000$$
 is

[Cairo - Rod El farag 23]

(Cairo - Heliopolis 22)

[Giza 23]

k. If
$$835 - A = 751$$
, then the value of $A = -$

(El-Fayoum 22)

[Port Said 22]

Story Problems

- 4. By using a bar model , write the equation, then find the solution.
 - a. The number of boys and girls in a school is 2,340, the number of boys in this school is 1,234

 What is the number of girls in this school?

 Bar model

Equation:

Solution:

b. III There are 12,000 species of ants. Of these 12,000 species and the rest live in other parts of the world. How many	
	Bar model
Equation:	
Solution:	
c. 📖 There are 5,328 ants in the colony. In the colony,	Barmodel
2,164 ants are females and the rest are males.	
How many male ants are in the colony?	
Equation :	
Solution:	(Aswan - Noba 23)
d. 💷 In colony A , there are 1,200 ants. Some ants are out fora	aging for food and supplies, and
700 ants are taking out the colony's trash. How many ants	are foraging for food and supplies? Bar model
Equation :	15-W1 W1 10 X1-N13
Solution :	
5. Solve the following problems.	
a. A road of 768 km length. If a train traveled a distance of	328 km from this road.
, what is the remaining distance of the road?	[Giza - Awseem 23]
b. Salma and Youssef start a business project, Salma paid money of the business project is 668,500 pounds	42,650 pounds, if the capital
, find the money which Youssef paid.	[El-Kalyoubia 23]
Challenge	
6. Solve the equation by using a bar model.	
l+l=8	

Multiple Choice Questions

Choose the correct answer.

1. In the opposite bar model,

X 425 231

A. 666

x =

- **B.** 566
- C. 665
- D. 656 [El-Kalyoubia 23]
- In the bar model, the value of m is-

256 180 m

- A. 124
- **B.** 156
- C. 76
- D. 436
- [El-Beheira 23]

3. In the equation: b = 4,358 = 3,422

, the value of b = [Souhag 23]

- A. 7,780
- **B.** 6,653
- C. 5,662
- **D.** 5,556

4. If 614 - x = 600, then x =

(Cairo 23)

- A. 11
- **B.** 12
- C. 16
- D. 14

5. The value of x in the equation:

725,625 + x = 935,075 is

6. If 32,782 + k = 41,262, then k = 41,262

- (Aswan 23)
- A. 292,450
- **B.** 290,450
- C. 209,540
- **D.** 209,450

- A. 8,562
- **B.** 8,480
- C. 74,044
- D. 73,916

7. If 35,741 - y = 7,425, then y =



- **B.** 43,166
- C. 40,213
- **D**. 15,730

- 8. Sara had 374,522 L.E. She bought a car for
 - 271,500 L.E., then the remaining money

with her =

- A. 646,022
- **B.** 103,022
- **C**. 107,390
- **D**. 102,352

9. Hany had 21 pounds. He gave his friend a lot of pounds and he had 15 pounds left. Let C represent the amount of the pounds with his friend.

Which equation represents this problem?

- **A.** 15-c=21
- **B.** 21-c=15
- C. 21+15=c
- **D.** 21 + c = 15
- 10. In a primary school, there are 680 boys and 800 girls. Let P be the number of all the pupils in this school.

Which bar model represents this problem?

- A. P 680 800
- C. 680 800
- B. P 600 860
- D. 800 680 P

Solving Multistep Story Problems with Addition and Subtraction



Learn

Some story problems have a hidden question.

To solve the problem, you must first find and answer the hidden question.

Example

Amgd is reading a book. He reads 96 pages in the first week and 129 pages in the second week. The book has 290 pages.

How many pages are left to read?

Solution [V



· Hidden question:

How many pages did Amgd read in the two weeks? Amgd read = 96 + 129 = 225 pages

 Use the new information to solve the problem and find the left pages. The left pages = 290 - 225 = 65 pages

Another Way

Hidden question:

How many pages are left in the first week?

290 - 96 = 194 pages

Final answer:

How many pages are left to read? 194 - 129 = 65 pages

Third Way

Bar model

290	
96 + 129	n

· Equation:

$$96 + 129 + n = 290$$

 $225 + n = 290$

Answer:

$$n = 290 - 225 = 65$$
 pages

check your understanding

A library sold 25,325 books in the first week, 19,712 books in the second week and 28,119 in the third week. If the library had 473,590 book. How many books are left?

Notes for parents:

· Give your child a multistep story problem and ask your child to use the solving steps to help solving the problem.

10 on lesson 5

REMEMBER

• UNDERSTAND APPLY

Solving Multistep Story Problems with Addition and Subtraction

PROBLEM SOLVING

From the school book

An	swer the following problems.
a.	Sara, Bassem and Mina are collecting stamps. Sara collected 743 stamps, Bassem collected 198 stamps and Mina collected 357 stamps. How many more stamps did Sar collect than Bassem and Mina have combined?
b.	A factory sold 6,580 toys in the first month, 7,214 toys in the second month, and 5,975 toys in the third month. The expect number of sold toys is 25,000 toys by the end of the fourth month. How many toys are needed to be sold in the fourth month to reach this count?
c.	The Nile River is approximately 6,650 kilometers long. Kareem and his family travel the Nile River from one end to the other end. If they travel 1,075 kilometers in January, then 1,120 kilometers in February, and then 1,325 kilometers in March, how many more kilometers do they still need to travel to reach the other end?
d.	The ant colony website hopes that a new colony A with up to 173,500 will form. If a colony of 27,385 ants and a colony of 52,890 ants join the new colony, how many more ants can join?
e.	The Great Pyramid had 59,000 visitors in January, 27,525 visitors in February, and 32,975 visitors in March. They expect to have 150,000 visitors by the end of April. How many visitors need to show up in April to reach this count?

- f. New Valley has a population of 256,088. If Matrouh has a population of 429,999 and South Sinai has a population of 108,951, how many more people do Matrouh and South Sinai have combined than New Valley?

 [Aswan 23]
- g. Mariam saw on the website that several smaller Pharaoh ant colonies were joining together to form a larger colony. On Monday, 1,725 ants joined together with 22,750 ants. Then, another 6,075 ants joined. How many ants were in the larger colony on Monday? Omar checked the website on Friday and learned that there were now 50,750 ants in the colony. How many ants had joined the colony since Monday?
- h. Ahmed had a pie with 340 calories for breakfast. Then, Ahmed had a glass of milk, an apple, and a chicken sandwich for lunch. The milk had 190 calories, the apple had 85 calories, and the chicken sandwich had 255 calories. If the average adult can eat 2,000 calories per day, how many more calories can Ahmed eat today?

Challenge

2. The opposite table represents the number of shirts in stock of a store.

Answer the following problems.

a. How many more red shirts than green shirts?

	Green	Red
Small	15,436	18,421
Medium	33,142	43,218
Large	5,347	14,132

b. How many more small shirts than large shirts?

Unit Two Assessment



1. Choose the correct answer:

1. 13 + 7 = 7 + 13, represents — property.

[El-Monofia - Sadat City 23]

- A. commutative
- B. associative
- C. additive identity
- 2. In the opposite Bar Model, the value of w =

(Aswan - Noba 23) w

- A. 2,957
- B. 9,449
- C. 3,043
- **D.** 3,000

6,203 3,246

3. 613 – 247 =

[Cairo - Math's Inspection 23]

- A. 567
- **B.** 343
- C. 366
- **D.** 807

4. The additive identity in the natural numbers is —

(Giza 23)

A. 0

B. 1

C. 10

D. 2

- **5.** 112 + 369 = 369 +
 - A. zero
- **B.** 369
- C. 112
- **D.** 481
- 6. Rana had 251,750 pounds, she bought a mobile for 5,555 pounds and a car for 125,780 pounds, then the left money with Rana is ______ pounds.
 - A. 131,335
- B. 120,415
- C. 125,970
- D. 246,195

- 7. 3,508 + 3,692 =
 - A. 61,190
- **B.** 184
- C. 7,190
- **D**. 7,200

2. Complete the following:

1. 91,024 + 32,549 =

[Cairo - Heliopolis 23]

2. The additive identity is

[El-Beheira - Hosh Essa 23]

- 3. Two ants colonies have 33,585 ants. If colony A has 17,990 ants, then the number of ants in colony B = _____ ants.
- **4.** 15 + 5 + 7 = [15 + _____] + 7 = 15 + [5 + ____]
- 5. In the bar model $\frac{87}{27}$, the equation which you can form for it is and the value of c equals
- **6.** If n = 34 = 29, then n =
- **7.** 7,000 350 = _____
- 8. A local bakery sold 7,120 zalabya in one day. If they sold 1,269 zalabya in the morning and 2,658 zalabya in the afternoon, then the number of zalabya sold during the rest of the day is _____ zalabya.

3. Choose the correct answer.

- 1. In the bar model $\frac{256}{m}$, the value of m is
 - A. 124
- **B.** 156
- C. 76

D. 436

- **2.** [112 + 38] + 77 = 112 + [+ 77]
 - A. 38

B. 77

- C. 115
- **D**. 150

- **3**. 1,325 820 =
 - A. 305
- **B.** 405
- C. 505
- **D**. 1,505

- **4.** 0 + 5,298 = 5,298 is using
 - A. associative property

B. commutative property

C. additive identity property

- D. subtraction mental strategy
- 5. If 3,645 + y = 5,789, then the value of y is
 - A. 2,144
- B. 3,144
- C. 8,434
- D. 9,434
- **6.** Joudy found that 38,828 + 52,309 = 91,137. Which estimate could she use to check if her answer is reasonable?
 - **A.** 30,000 + 50,000 = 80,000
- **B.** 30,000 + 60,000 = 90,000
- **C.** 40,000 + 50,000 = 90,000
- **D.** 40,000 + 60,000 = 100,000
- 7. If x = 180 = 256, then x = -

[El-Monofia - Quesna 23]

A. 76

- B. 436
- C. 176

D. 406

4. Answer the following.

- 1. A bridge of ants consists of 692 ants and another bridge consists of 165 ants, how many ants are there in two bridges? [Cairo Math's Inspection 23]
- 2. Nader made 18 pieces of falafel. He ate 6 pieces and his brother ate 5 pieces.

 Represent these data using bar model to show how many pieces are left?
- 3. Find 734 245
- 4. The Cairo tower had 66,000 visitors in January ,38,536 visitors in February and 46,985 visitors in March. The expect to have 200,000 visitors by the end of April. How many visitors need to show up in April to reach this count?

THEME ONE

Number Sense and Operations

FINS 5

Concepts of Measurement

- ► Concept 1 :

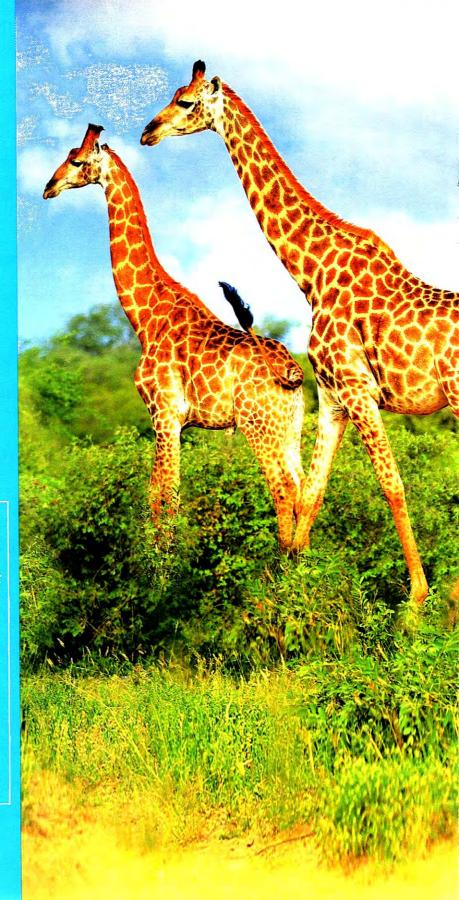
 Metric Measurement
- ► Concept 2:

 Measuring Time

Fast Facts

- ▶ Giraffes' long necks allow them to reach the leaves on treetops. A giraffe is the tallest land mammal. Some giraffes can be as tall as 6 meters!
- ▶ The elephant is the largest land mammal. Elephants can weigh as much as (7,250 kilograms). They drink 110 to 180 liters of water a day!

 A baby elephant is called a calf.



Concept

Metric Measurement



Lesson No.	Lesson Name	Learning Objectives
Lesson 1	Measuring Length	 Students will explain the relationship between metric units of length. Students will convert between metric units of length.
Lesson 2	Measuring Mass	 Students will explain the relationship between metric units of mass. Students will convert between metric units of mass.
Lesson 3	Units of Capacity	 Students will explain the relationship between metric units of capacity. Students will convert between metric units of capacity.

1

Measuring Length



Meter, decimeter, centimeter and millimeter are four units of measuring lengths.



A corn kernel is about 10 millimeters long.



An ear of corn is about 20 centimeters long or 2 decimeters long.



A young corn plant is about 1 meter tall.

Relating Units of Length

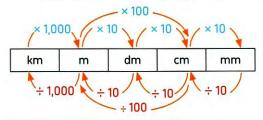
Table of Measures

1 kilometer = 1,000 meters
1 meter = 100 centimeters
1 meter = 10 decimeters
1 decimeter = 10 centimeters
1 centimeter = 10 millimeters

	Name	Abbreviation
	Kilo meter	km
nits	Meter	m
Jh u	Decimeter	dm
Lengh units	Centimeter	cm
	Millimeter	mm

Converting Metric Length Units

- When you change larger units to smaller units multiply.
- When you change smaller units to larger units divide.



Example 1

Fill in blanks.

Notes for parents:

 Let your child understand that when converting from larger length unit to smaller length unit he/she can multiply by 10, 100, 1,000, ...

Solution [V]



- a. 8 m = 800 cm
- $c. 130 \, \text{mm} = 13 \, \text{cm}$
- **e.** 5 km = 5.000 m=500,000 cm

- **b.** $700 \, \text{cm} = 7 \, \text{m}$
- **d.** 15,000 m = 15 km
- f. 8 km = 8,000 m $= 80,000 \, dm$



Example 2

Complete each of the following.

- **a.** 7 m, 56 cm = ----- cm
- c. 12 km, 12 m = ----m

- **b.** 9 cm, 5 mm =
- **d.** 4 m , 16 dm = dm

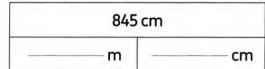
Solution [V]

- a. 7 m, 56 cm = 700 cm + 56 cm = 756 cm
- c. 12 km, 12 m = 12,000 m + 12 m = 12,012 m
- **b.** 9 cm, 5 mm = 90 mm + 5 mm = 95 mm
- **d**. 4 m, 16 dm = 40 dm + 16 dm = 56 dm

Example 3

Convert the lengths into the units on the bar models.

a.



29,60)3 m
km	m

Solution [V]



845	5 cm
8 m	45 cm

[Think: 845 = 800 + 45]

b

29,6	03 m
29 km	603 m

[Think: 29,603 = 29,000 + 603]

check your understanding

Complete each of the following.

- **a.** 600 mm = cm
- c. 500 dm = ------ m
- **b.** 600 cm = ----- m
- **d.** 3 km + 300 m =
- e. 563 cm = ----- m, -- cm

[·] Let your child explain the relationships between the metric length units "km, m, dm, cm, mm".

Exercise on lesson 1

Measuring Length

	• REMEMBER • UNDERSTAND	O APPLY 🚴 PR	OBLEM SOLVING	From the school book
1.	Circle the best unit to n	neasure each lei	ngth.	
•	1. Height of a student		TV:	
	Kilometer	Meter	Centimeter	Millimeter
	2. Distance between home	and school		
	Kilometer	Meter	Centimeter	Millimeter
	3. Length of the Nile River			
	Kilometer	Meter	Centimeter	Millimeter
	4. Length of an ant			
	Kilometer	Meter	Centimeter	Millimeter
	5. Distance from Cairo to A	lexandria		
	Kilometer	Meter	Centimeter	Millimeter
2.	Complete.			
0	a. 🛄 1km = — — m	Č.	b. 16 cm =	mm (Cairo - El-Nozha 23)
	c. 12 dm = cm	[Giza 23]	d. 🕮 1m =	— cm
	e. 5 m = —— cm ([Giza – Haram 22]	f. 7 m =	cm [Cairo 23]
	g. kilometers	= 40,000 meters	5	(Aswan 23)
	h. 7,000 meters =	kilometers		(Souhag 23)
	i. 9,000 mm =	cm	(Alex. – El-Montaza	h 23] [Alex. – Borg El-Arab 22]
	j. 70 cm = — dm			[Cairo – El-Nozha 23]
	k. 8 meters , 45 cm = —	cm	(El	-Monofia - Sers El-Layyan 23)
	l. 9,250 meters =		m	[Alex. 23]
	m. 4 m ,18 cm =	— cm	n . 8 km ,14 m = —	m
	o. 18 m ,14 cm =	— cm	p. 27 km ,55 m = —	m [El-Dakahlia 22]
	q. 423 cm = m	, — cm	n	[Alex Al-Agamy 23]
	r. 897 mm = c	m , n	nm	[Ismailia 23]
	s. 5 km - 3,000 m =	m		[Giza 23]

Find the missing numbers.

230 cm — m — cm

b. 478 cm — cm

c. 85 cm — cm

d.

	— m	[Cairo 23]
3 km	40 m	

8 km 88 m

7 cm 5 mm

f.

4. Answer each of the following.

a. List the following lengths in an ascending order:

(Cairo - Heliopolis 23)

8 m, 8,000 cm, 8 km, 8 mm

- **b.** A train covers 3 km in one minute, what is the distance the train covers in 7 minutes in kilometers and in meters?
- c. \(\) When scientists studied the anthill, they found that it was 8 meters deep.

e.

- 1. How many centimeters would that be? Show your work.
- 2. The colony had to move tons of soil to construct their nest. The worker ants had to carry loads of soil 1 kilometer to the surface. If one ant carried 10 loads of soil in a week, How many kilometers did it travel while moving soil? How many meters? How many centimeters?

_____ km _____ m _____cm

- d. (1) Carpenter ants can be up to 3 centimeters long. A mature colony can have up to 100,000 ants. If the ants lined up end to end and each ant is 1 centimeter long, How many meters long would a line of 100,000 ants be?
- e. Using the information from the previous item,

 How many kilometers long would the line of 100,000 ants be?

Multiple Choice Questions

Choose the correct answer.

1.	4 km = m [Mo	nofia – Sadat city 23]	2. 10 meters =	centimeters (Cairo 23)
	A. 40	B. 400	A . 10	B. 100
	C. 4,000	D. 4	C . 1,000	D. 1
3.	5 m = — cm	[Souhag 23]	4. 5,000 mm =	m
0	A . 5	B. 50	A . 5	B. 50
	C. 500	D . 5,000	C . 500	D . 50,000
5.	505 cm = m	,——cm		400 cm
0	A. 5 , 5	B . 5 , 50	A . 84	B. 840
	C. 50 , 5	D . 50 , 50	C . 8,400	D . 84,000
7.	423 cm =	1onofia – Quesna 22)	8. 4 m , 16 dm = -	dm
	A. 23 m , 4 cm	B. 42 m , 3 cm	A . 416	B . 4,160
	C . 4 m , 23 cm	D. 3 m , 42 cm	C. 56	D . 4,016
9.	5 km, 5 m =	m (Giza 23)	10. 6 m , 50 cm = -	cm [Giza – Abo El-Nomros 23]
	A . 55	B. 5,050	A. 605	B. 650
	C . 5,005	D . 5,500	C. 560	D . 6,500

11. Which sentence best explains the relationship between a meter and a kilometer?

[Alexandria - West 22]

- A. A kilometer is equal to 100 meters.
- A. Aktionieter is equal to loo meters.
- C. A meter is equal to 1,000 kilometers.
- B. A kilometer is equal to 1,000 meters.
- D. A meter is equal to 100 kilometers.
- 12. Using the relationship between units of length, choose the correct answer to complete the following table : [Cairo Heliopolis 22]

kilometer	meter	centimeter
60	60,000	?

- A. 600
- **C.** 60,000

- B. 6,000
- D. 6,000,000

2

Measuring Mass

Learn

Matter is what all objects are made of. Mass is the amount of matter in an object. Metric units of mass are the gram [g], the kilogram [kg] and the ton.



The mass of a small paperclip is about 1 g

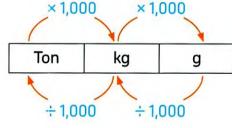


The mass of a baseball bat is about 1 kg



The mass of a car is about 1 ton

Converting Metric Mass Units



1Ton = 1,000 kilogram

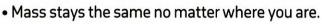
1 kilogram = 1,000 grams



1 Ton = 1,000,000 grams

Note

Mass and weight are different.



 Weight changes from a place to another, for example the weight of any object on the Earth is different from its weight on the moon.

Notes for parents:

 \bullet Ask your child to find something at home of mass 20 g , and another something of mass 1 kg.



Example 1

Complete each of the following.

e.
$$18 \text{ kg}$$
, $81 \text{ g} =$

b. 32,000 grams = kilograms

d.
$$4 \text{ kg}$$
, $63 \text{ g} = ----\text{g}$

f.
$$3 \text{ tons}$$
, $315 \text{ kg} =$ kg

Solution [V]

c.
$$7 \text{ tons} = 7,000 \text{ kilograms}$$
.

e.
$$18 \text{ kg}$$
, $81 \text{ g} = 18,000 \text{ g} + 81 \text{ g} = 18,081 \text{ g}$

g.
$$8 \text{ kg}$$
, $115 \text{ g} = 8,115 \text{ g}$

d.
$$4 \text{ kg}$$
, $63 \text{ g} = 4,000 \text{ g} + 63 \text{ g} = 4,063 \text{ g}$

f.
$$3 \text{ tons}$$
, $315 \text{ kg} = 3,000 \text{ kg} + 315 \text{ kg} = 3,315 \text{ kg}$

h.
$$5 \text{ tons}$$
, $5 \text{ kg} = 5,005 \text{ kg}$

Example

Convert the masses into the units on the bar models.

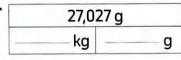
a

1,560 g	
kg	g

C.

5,555 kg	
tons	kg

b.



	kg
2 tons	2 kg

Solution [V]



1,5	60 g
1kg	560 g

[Think: 1,560 = 1,000 + 560]

C.

a.

5,55	5 kg
5 tons	555 kg

[Think: 5,555 = 5,000 + 555]

b.

27,0	27 g
27 kg	27

[Think : 27,027 = 27,000 + 27]

d.

2,00	12 kg
2 tons	2 kg

[Think : 2,002 = 2,000 + 2]

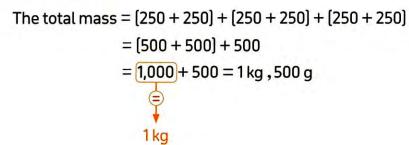
Notes for parents:

Ask your child to explain the relation between the metric mass ton and kg.

Example 3

An oat bag of mass 250 g, Dalia bought 6 bags, what is the total mass of bags in kilograms and grams?

Solution [V]





1

check your understanding

Complete each of the following.

d.
$$4,653 g =$$
 kg, _____g

f.
$$9 \text{ kg}$$
, $314 \text{ g} =$

h.
$$8,436 \text{ kg} = ---- \text{kg}$$

[•] Let your child explain the relationship between the metric mass units "kg, g".

Exercise 12

on lesson 2

Measuring Mass

REMEMBER

UNDERSTAND

O APPLY

🖧 PROBLEM SOLVING

From the school book

[Cairo 23]

(Ismaillia 23)

(El-Menia 23)

(Souhag 23)

[Cairo 23]

[Alex. - Al-Agamy 23]

(Giza - Abo El-Nomros 23)

1. Complete. Tell whether you multiply or divide.

d. 5 ton = _____ kg

f. 9,000 kg = _____ton

j. 9 kg, 35 g = ----g

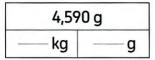
k.
$$6,450 \text{ kg} = \frac{1}{2} \text{ kg}$$

m. $35 \, \text{kg}$, $86 \, \text{g} = ----- \text{g}$

p.
$$7,324 \text{ kg} = ---- \text{ kg}$$

2. Find each missing number.

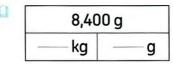




c. 💷

	— a
7 kg	414 g

b. 📖



[Cairo - Al Khalifa and Mokattam 23] [El-Kalyoubia 22]

d.

	– kg
2 ton	30 kg

	Compare. Write	(>, < 01 =).		
	a. 95 kg	950 g	b. 3 kg	30,000 g
	c. 400 g	400 kg	d. 2 ton	2,000 kg
	e. 6 kg,6 g	660 g	f. 2 kg,530 g	24,000 g
4.	What is the orde	er of the following masses	나이 하는데 맛있다면 그렇게 되었다.	
		6 kg , 4,769 g , 2 to	ons ,980 kg ,68,000	0 g
5.		lack ants is estimated to with the lack and		
	A different ar Rewrite that we	nt colony is estimated to v ight in grams.	weigh 14 kilograms and	d 89 grams.
•	Rewrite that we	ight in grams.		d 89 grams. Mass of Sports Balls
•	Rewrite that we	ight in grams. rder of the sports balls fro		
•	Use the picture. a. What is the o	ight in grams. rder of the sports balls fro		
•	Use the picture. a. What is the o	ight in grams. rder of the sports balls fro		Mass of Sports Balls Basketball Bowling ball
•	Use the picture. a. What is the o	ight in grams. rder of the sports balls fro	om greatest	Mass of Sports Balls Basketball Bowling ball 6 kilograms Table tennis ball Tennis ball
•	Use the picture. a. What is the omass to least b. A baseball ha Mariam has 2	ight in grams. rder of the sports balls fro t mass ?	om greatest ams.	Mass of Sports Balls Basketball booking ball 616 grams Table tennis ball 3 grams To grams

Multiple Choice Questions

Choose the correct answer.

1.	is a m	easuring unit of mass.	2. 3 kg = gm	(Aswan 23)	
	A.km	B. Liter (Giza 23)	A.3	B. 30	
	C. Hour	D. kg	C. 300	D. 3,000	
3.	2 kg =	gm (Alex El Montaza 23)	4. 10 kilograms =	grams	
			7	[Cairo – El-Nozha 23]	
	A. 20,000	B . 2,000	A .10	B . 100	
	C . 200	D. 20	C . 1,000	D . 10,000	
5.	15 kg =	gm [Cairo – El - Nozha 23]	6. 5 ton = kg		
0	A. 150	B . 1,500	A. 5	B . 50	
	C . 15,000	D. 15	C . 500	D. 5,000	
7.	5,000 grams =	kilograms	8. 6,000 gm =	– kg	
0		[Aswan 23]	_	(Alex Montaza 23)	
	A .50	B. 500	A . 6	B. 60	
	C . 5	D. 1,000	C . 600	D . 60,000	
9.	12,000 kg =	ton	10. 5 kg and 861 gm = —	gm (Cairo 23)	
O	A. 12	B. 120	A . 5,861	B. 58,160	
	C . 1,200	D. 12,000	C . 5,000,861	D . 5,861,000	
11.	8,600 g	86 kg	12. Which of the following	ng is the greatest	
0	A. >		mass?		
	B. <		A . 900 g	B. 20,000 g	
	c . =		C . 70 kg	D. 16 kg	

Units of Capacity

Learn

Capacity is the amount of liquid a container can hold.

• A Milliliter [mL] and a liter [L] are metric units that measure capacity.

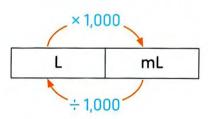


A milliliter is about 20 drops from an eyedropper.



The water bottle holds 1 liter (L) of water.

Converting Metric Capacity Units



1 Liter = 1,000 milliliters

Example 1

Find each missing number.

- a. 8 Liters = _____
- milliliters. **b.** $56,000 \, \text{mL} = -$
- 47,665 mL mL
- **d.** 13 L , 13 mL = _____

Solution 🕎



- **b.** 56,000 mL = 56 L
- 47,665 mL C. 47 L 665 mL
- d. 13 L, 13 mL = 13,000 mL + 13 mL = 13,013 mL

Notes for parents:

• Ask your child to bring 2 containers might hold about 1 liter at home.

Example 2

Calculate.

- a. 4L+3,778 mL = _____L, ____mL
- **b.** 2 L , 340 mL + 900 mL = _____ L , ____ mL
- c. 5L-2.570 mL = _____L, ____mL
- d. 24 L, 800 mL 19 L, 510 mL = _____L, ___



Solution [V]



- a. 3,778 mL = 3 L,778 mL
- 4L+3L,778 mL = 7L,778 mL
- **b.** 2L, 340 mL + 900 mL = 2L + (340 + 900) mL = 2 L + 1,240 mL = 2 L + (1,000 + 240) mL= 3 L,240 mL
- c. $5L = 5 \times 1,000 = 5,000 \text{ mL}$ 5,000 mL - 2,570 mL = [5,000 - 2,570] mL= 2,430 mL = (2,000 + 430) mL = 2 L,430 mL
- d. 24 L, 800 mL -19 L , 510 mL $=5L,290 \, mL$

Example 3

A truck consumed 1L,560 mL of gas in the first hour and 1L,840 mL in the second hour. Write the amount of gas consumed by the truck in liters and milliliters in the two hours.

Solution [V]



1L, 560 mL

+1L,840 mL

2L, 1,400 mL

 $= 2L + 1L, 400 \, mL$

 $= 3L ,400 \, mL$

Another Solution:

1L,560 mL = 1,000 mL + 560 mL = 1,560 mL

1L, 840 mL = 1,000 mL + 840 mL = 1,840 mL

The amount = 1,560 mL + 1,840 mL = 3,400 mL

 $=3L,400 \, mL$

Notes for parents:

· Let your child explain the relation between the metric capacity units " L , mL".

Enrich your knowledge

• Changing units in the metric system is like moving from one place-value position to another.

	×1	×	10 ×	10	× 10	× 10 ×	10
	kilo- thousands	hecto – hundreds	deca – tens	base - ones	deci – 1 10	centi – 1 100	milli - 1 1,000
Units of length	Kilometer	Hectometer	Decameter	Meter	Decimeter	Centimeter	Millimeter
	km	hm	dam	m	dm	cm	mm
Units of mass	Kilogram	Hectogram	Decagram	Gram	Decigram	centigram	Milligram
	kg	hg	dag	g	dg	cg	mg
Units of capacity	Kiloliter	Hectoliter	Decaliter	Liter	Deciliter	centiliter	Milliliter
	kL	hL	daL	L	dL	cL	mL
	1	10	÷ 10 / ÷	10	÷ 10	÷10	÷10

Check your understanding

1. Complete each of the following.

2. Complete.



Exercise

on lesson 3

Units of Capacity

REMEMBER

-		-	-	n	OT			n
	UN	ш	н	к	SI	Α	N	o
	~	-	-	٠,	~ .	• •	•••	-



From the school book

Complete.

$$k. 8L,500 mL = ---- mL$$

$$q. -mL = 61 L, 254 mL$$

$$u. - mL = 7L,400 mL$$

[Cairo 23]

Find each missing number.



6,360 mL mL

C.

_	mL mL
8 L	910 mL

[Alex - El-Montazah 23]

d.

-	mL
2 L	250 mL

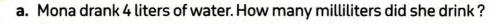
[El-Beheira - Hosh Essa 23]

3. Fill in blanks.

i.
$$4L,540 \, mL - 4L,95 \, mL = ---- \, mL$$

j.
$$4L,375 \text{ mL} + 5L,625 \text{ mL} =$$

5. Answer each of the following.



b. A car is filled with 45 liters of petrol. How many milliliters would that be?

c. A family drank 1 liter, 500 milliliters of orange juice at breakfast. If there were 3 liters of orange juice before breakfast, how much orange juice is left?

d. III Doha's fish tank contains 5 liters, 245 milliliters of water. If the tank can hold 10 liters of water, how much more water does she need to fill the tank?

e. A car was filled with 20 liters, 500 milliliters of petrol. At the end of the day, there were 15 liters, 250 milliliters left in the tank. How much petrol was used?

Multiple Choice Questions

Choose the correct answer.

[Giza 23]

2. 7 liters = milliliters [Cairo 23]

B. 30

A.70

B. 700

D. 3,000

C. 7,000

D. 70,000

[Alex. - Al-Agamy 23] (Sharkia 22)

4. 8L,35mL = --mL(Ismaillia 23)

B. 3,013

A.835

B. 8,350

D. 13,030

C. 8,035

6. 6L+4,000 mL=-

D. 83,500

A. 5,500

B. 5,050

A. 10

--L B. 46

C. 550

D. 15,050

C. 64

D. 640

7.
$$7L,900 \text{ mL} - 4L,400 \text{ mL} = \dots L, \dots \text{ mL}$$

A. 3,400

B. 2,500

C. 2,400

D. 3,500

A. 29,97

B. 29,970

C. 2,907

D. 29,907

Emy drunk 3 liters, then she drunk —

milliliters.

[Cairo - El-Salam 23]

A.3

B. 30

C. 300

D. 3,000

10. The capacity of a juice can is 1 liter and 500 mL, then its capacity in milliliters

mL

[Giza - Abo El-Nomros 23] [Sharkia - Abo Kebeer 22]

A. 150

B. 1,500

C. 15,000

D. 1,005

11. Zahra poured 2 liters of milk into a mixing bowl. How many milliliters of milk did she pour?

A. 20

B. 200

C. 2,000

D. 20,000

Concept

Measuring Time



Fast Fact

The first pocket watch was invented in the 1500's by Peter Henlein. It only had an hour hand.

The minute hand was added in the late 1600's.

Lesson No.	Lesson Name	Learning Objectives
Lessons 4&5	Units of Time	Students will tell time to the minute.Students will explain relationships between units of time.
	Elapsed Time	 Students will explain elapsed time. Students will solve elapsed time problems. Students will explain the strategies they use to solve elapsed time problems.
Lesson 6	Applications of Measurement 1	 Students will add and subtract to solve problems. Students will solve story problems involving measurement. Students will apply a variety of strategies to solve story problems.
Lesson 7	Applications of Measurement 2	 Students will multiply and divide to solve problems. Students will solve story problems involving measurement. Students will apply a variety of strategies to solve story problems.

Lessons

4&5



Elapsed Time

Learn 1 What time is it?

This morning, Amgad's family will take a ride on the railroad. The train leaves at 11 o'clock.

Amgad's family is in the station waiting room. The time right now is shown on the clock

Has Amgad's family missed the train? The time on the clock is 10:50 or 10 to 11.

So, Amgad's family has not missed the train.



Example

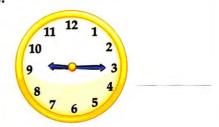
Write the time shown on the clock in two different ways.







d.



Solution [V]



- a. It is 2 o'clock , 2:00
- 7:55 c. It is 5 to 8
- b. It is half past 1
- 1:30
- 9:15 d. It is quarter past 9

Notes for parents:

• Ask your child to count from 7:00 to 8:00 using 5-minutes intervals (7:00, 7:05, 7:10, and so on).



Units of Measuring Time

• Week, day, hour, minute, second, these units are used to measure time.

1 week = 7 days

1 day = 24 hours (hr)

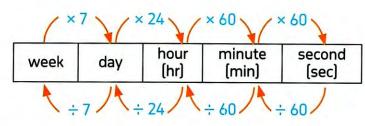
1 hour = 60 minutes (min)

1 minute = 60 seconds (sec)



Converting Time Units

First Using multiplication:

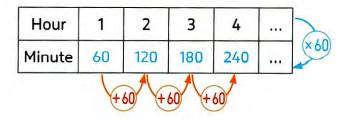


Second Using repeated addition (Pattern):

1 week = 7 days

Week	1	2	3	4	
Day	7	14	21	28	

1hour = 60 minutes



1 day = 24 hours

1	2	3	4		>
24	48	72	96		×
	24	1 2 24 48	1 2 3 24 48 72	1 2 3 4 24 48 72 96	2/ /2 =2 2/

1 minute = 60 seconds

Minute	1	2	3	4	
Second	60	120	180	240	

Example 2

Complete.

- **a.** 6 weeks = days
- **c.** 5 days = hours
- e. 9 minutes = seconds
- **b.** 13 weeks = days
- **d.** 8 hours = minutes
- f. 75 minutes = hours, minutes

[·] Ask your child how many hours there are in a week.



- a. You can use multiplication: 6 weeks = $6 \times 7 = 42$ days. or You can use repeated addition: 6 weeks = 7 + 7 + 7 + 7 + 7 + 7 = 42 days.
- **b.** 13 weeks = $13 \times 7 = 7 \times [10 + 3]$ "Distributive property of multiplying" $= [7 \times 10] + [7 \times 3] = 70 + 21 = 91$ days.
- c. $5 \text{ days} = 5 \times 24 = 5 \times [20 + 4]$ "Distributive property of multiplying" $= (5 \times 20) + (5 \times 4) = 100 + 20 = 120$ hours.
- **d.** 8 hours = $8 \times 60 = 480$ minutes.
- e. 9 minutes = $9 \times 60 = 540$ seconds.
- f. 75 minutes = 60 minutes + 15 minutes = 1 hour ,15 minutes

Note for (f 75 min 60 min 15 min

Example

Find the missing numbers.

- **b.** 5 days , 5 hours = hours. a. 4 weeks , 2 days = days.
- c. 3 hours, 20 minutes = minutes. d. 2 minutes, 30 seconds = —

Note

to convert units.

Solution [V

- a. 4 weeks = $4 \times 7 = 28$ days. So, 4 weeks, 2 days = 28 days + 2 days $= 30 \, \text{days}.$
- **b.** 5 days = $5 \times 24 = 5 \times [20 + 4]$ = 100 + 20 = 120 hoursSo, 5 days, 5 hours = 120 hours + 5 hours= 125 hours.

You can use different strategies

- **c.** 3 hours = $3 \times 60 = 180$ minutes.
 - So, 3 hours, 20 minutes = 180 minutes + 20 minutes = 200 minutes.
- d. 2 minutes = $2 \times 60 = 120$ seconds
 - So, 2 minutes, 30 seconds = 120 seconds + 30 seconds = 150 seconds.

check your understanding Fill in the blanks.

a. 5 hours , 10 minutes = ____ minutes.

- **b.** 3 days , 10 hours = ——— hours.
- c. 4 minutes, 11 seconds = seconds. **d.** 2 weeks , 2 days = _____ days.

Notes for parents:

- Remind your child the distributive property of multiplying.
- Remind your child how to multiply by multiples of 10.

Learn 2 Elapsed time

Elapsed time is the time that passes from the start to the end of an activity.

Example 4

Laila entered a shopping mall, spent 2 hours, 40 minutes shopping, and spent 50 minutes at lunch in a resturant, and then left the mall. How long did Laila spend in the mall?

Solution 🕎

There are different ways to calculate the elapsed time.

Add Times

Hours : Minutes

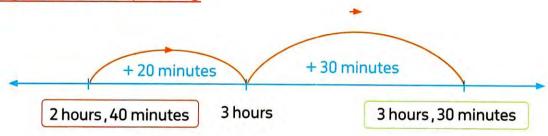
2 : 40

+ : 50

2 : 90 [Rename 90 minutes as 1 hour, 30 minutes] 60 minutes = 1 hour

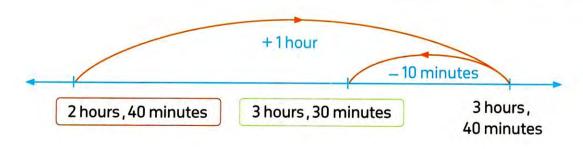
So, 2 hours + 1 hour + 30 minutes = 3 hours, 30 minutes

2. Using a Time Line by Adding



3. Using a Time Line by Subtracting





[·] Help your child find the elapsed time using different ways.

Lessons 4&5

4. Convert Units

[Think: 1 hour = 60 minutes]

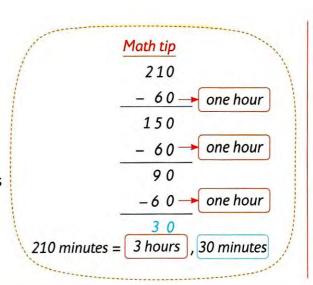
So, 2 hours = $2 \times 60 = 120$ minutes.

Then 2 hours, 40 minutes + 50 minutes

= 120 minutes + 40 minutes + 50 minutes

= 210 minutes

Then, 210 minutes = 180 minutes + 30 minutes = 3 hours, 30 minutes



Example 5

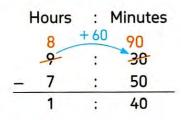
Yasser finds that a cinema show is full when he arrives at 7:50 A.M. next show begins at 9:30 A.M. How long will he have to wait for the next show?

Solution [V



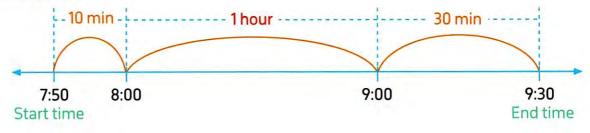
There are different ways to calculate the elapsed time.

Subtract Times



So, he will wait 1 hour, 40 minutes for the next show.

2. Using a Time Line



So, he will wait 1 hour, 40 minutes for the next show.

Example 6

Bassem left school at 2:30 P.M. and arrived home 35 minutes later.

What time did Bassem arrive home?

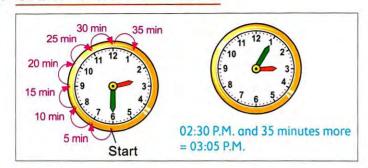
Notes for parents:

Ask your child what time will be 2 hours after 11:35 A.M.



Solution 🕎

1. Count Forward on a Clock

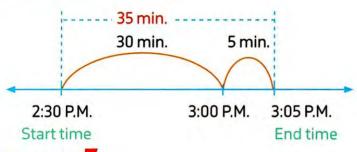


Math tip

When counting forward on a clock, increase one hour for each cross on 12.

So, Bassem arrived home at 3:05 P.M.

2. Using a Time Line



So, Bassem arrived home at 3:05 P.M.

Example 7

Calculate.

 $87 \, \text{min} = 60 \, \text{min} + 27 \, \text{min}$

= 1 hr + 27 min

c.
$$7:35-40$$
 minutes =

Solution 🕎



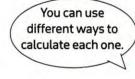
Hours

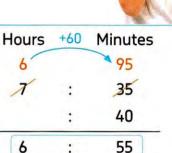
5

Another Solution

Hours

C.





b.

Check

6

your understanding

Minutes

37

50

87

27

Peter completed a bike ride 3 hours and 26 minutes after he started. He started the bike ride at 8:15 A.M. At what time did he finish?

Ask your child how many hours and minutes pass from the time he/she leaves for school until he/she returns home.

Exercise on lessons 4&5

- **▶** Units of Time
- ► Elapsed Time
- REMEMBER
- UNDERSTAND
- O APPLY
- PROBLEM SOLVING
- From the school book

1. Write the time.

a.



b.



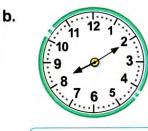
C.



2. Write the time in two ways.

a.





c.



It's

It's

It's

3. Complete each of the following tables.

a.	Minute	1	2	3	4	5	6	7	8	9	10
	Second	60									

b.	Hour	1	2	3	4	5	6	7	8	9	10
	Minute	60									

c.	Day	1	2	3	4	5	6	7	8	9	10
	Hour	24									

d.	Week	1	2	3	4	5	6	7	8	9	10
	Day	7									

Complete.

a. 5 weeks = days.

[Giza 23]

b. 2 hours = --minutes. [Giza 23]

c. 10 days = hours. (Kalyoubia 23)

d. 4 weeks = days. [Alex. 23]

e. 5 minutes = seconds.

[Behiera 23]

f. 3 hours = minutes.

seconds.

[Monofia - Sadat City 23]

q. 2 minutes = -

– weeks, –

days.

i. 130 minutes = — hours, — minutes.

days, hours. i. 50 hours = -

5. Solve the conversion problems.

h. 25 days =

a. 10 hours, 30 minutes = minutes.

[Aswan 23]

b. A week , 2 days = days.

[Suez 22]

c. 4 minutes , 20 seconds = seconds.

[Gharbia - Samanoud 22]

d. 4 days , 20 hours = hours.

[Aswan 23]

- **e.** 4 weeks , 2 days = days.
- f. 2 hours, 10 minutes = minutes.

(Souhag 23)

g. 2 days, 12 hours = hours.

[Cairo - El Shrouk 23]

- h. 🚇 6 minutes , 15 seconds = seconds.
- i. 1day ,6 hours = hours.

[Alex. - Montazah 23]

j. 10 hours ,7 minutes =

Compute the time.



- a. 3:25 + 45 minutes =
- **b.** \square 3:25+1:26=

c. 10:20 – 7:00 =

f. 2:45+6:17=

e. 5:45 + 25 min =

d. 7:51 – 3:35 =

- g. 3:15 + 2:50 = : (Ismaillia 23)
- **h.** \square 5:43 –1:25 = (Aswan 23)

i. 3:07-42 min = -

j. 5:07 – 2:13 =

O APPLY

7. Find the elapsed time.

a. Start: 1: 20 P.M.

End: 9:50 P.M.

b. Start: 6:40 A.M.

End: 10: 17 A.M.

c. Start: 4: 27 P.M.

End: 8:00 P.M.

d. From: 6:43 A.M.

To: 9:43 A.M.

e. From: 6:15 A.M.

To: noon

f. From: 11:40 A.M.

To:1:20 P.M.

Story problems on measuring time

8. Answer the following.

a. 🛄 It takes Dalia 2 hours and 15 minutes to drive to her grandmother's house.

How many minutes does the drive take?

b. An average ant works for 19 hours a day. How many hours does an ant work in 3 days?

c. Amir's family used their computer for 3 hours on Saturday, 4 hours on Sunday and 5 hours on Monday. How many total minutes were they on the computer?

d. 🔝 A worker ant takes 240 naps a day. Each nap lasts 1 minute.

About how many hours did the ant nap?

Story problems on elapsed time

	nswer the following.
a.	Mona's birthday party started at 7:00 in the evening. It took around 2 hours and 40
	minutes for the party to get over. What is the time at which the party got over?
b.	Farah was training for a marathon. Her goal was to run for 1 hour and 30 minutes. If she started running at 8:35 A.M., what time did she finish running?
C.	The train was scheduled to arrive at 5 : 10 P.M. However, it was delayed for 57 minutes.
	What time was it when the train arrived?
	What time was it when the train arrived?
d.	
d.	
•	The game started at 7:50 P.M. It ended at 10:05 P.M. How long was the game?
•	The game started at 7:50 P.M. It ended at 10:05 P.M.

- f. In Jana and Maha have 5 hours to watch three movies that last 1 hour and 22 minutes, 2 hours and 12 minutes and 1 hour and 57 minutes.
 - 1. Do the girls have enough time to watch all three movies? How do you know?
 - **2.** The girls decide to just watch the two shortest movies. If they start watching them at 5:30 P.M., what time will their movies end?
- g. (1) A worker ant went out to find food for the colony. It left at 6:30 A.M. and returned at 7:42 A.M. How long was that ant looking for food?



Multiple Choice Questions

Choose the correct answer.

1. 2 hours = — minutes

- [Beheira Hosh Essa 23] [Alex. Al Agamy 23] seconds [Cairo - El Salam 23] **B**. 60 A. 24 **B.** 130 A. 70 C. 120 **D.** 360 C. 60 D. 12 **3.** 5 weeks, 5 days = — days. 2 days and 2 hours = — hours. (Cairo - Rod El-Farag 23) [Giza - Awseem 23] [El-Beheira 22] A. 10 **B.** 25 A. 22 B. 4 C. 40 **D.** 50 C. 62 **D.** 50 1 day and 5 hours = hours. **6.** 2:50 + 40 minutes = -(Souhag 22) A. 29 **B**. 65 A. 2:10 **B.** 3:10
- C. 12:55D. 9:129. Adel spends 6 hours at school. If we
 - Adel spends 6 hours at school. If we want to calculate Adel's school day in

D. 35

B. 8:05

- A. add 6 with 60 B. add 6 with 24
- C. multiply 6 by 60 D. multiply 6 by 24
- 10. Fatima start cooking at 6:15 P.M. for 50 minutes, so, she finished

2. Two minutes and 10 seconds

- at P.M. [Giza Abo El-Nomros 23]
- **A.** 6:53

C. 2:54

A. 6:53

C. 5:53

8. 6:43 – 50 minutes = –

B. 6:55

D. 3:30

B. 5:07

D. 6:07

- **C.** 7:00
- **D.** 7:05
- 11. On Saturday morning Peter began cutting the grass at 9:35 A.M. He finished at 10:43 A.M. How long did it take Peter to cut the grass?

[Beni Suef 22]

A. 1:08

C. 15

7. 8:15 + 3:50 = -

minutes, we -

A. 12:05

B. 1:10

C. 2:08

D. 2:40

Applications of Measurement 1 [Addition and Subtraction]



Problem

Ali and Giovanni each caught a fish.

The two fish have

a mass 8,250 g

The mass of Giovanni's fish

is 3 kg, 530 g

What is the mass of Ali's fish?





Understand

- What are you asked to find?
- What information will you use?
- Is there any information you will not use? If so, what?



Plan

- What strategies can you use to solve the problem?
 - Convert measurement units first.
 - Use subtraction standard algorithm.



Solve

• How can you use the strategy to solve the problem?

The mass of Giovanni's fish = 3 kg, 530 g (Think: 1 kg = 1,000 g)

= 3,530 g

7)12

The mass of Ali's fish = 8,250 - 3,530

=4,720 g

= 4 kg,720 g



Check

• What other strategy could you use?

Notes for parents:

• In this lesson, your child will use addition and subtraction to solve multistep story problems involving length, mass, capacity, and time.

Example 1

Abeer purchased 7 kilograms of sugar,

10 kilograms of flour, 500 grams of cocoa,

275 grams of pecans, and 225 grams of coconut.

What is the total mass of her groceries

in kilograms?

Solution



The total mass =
$$7 \text{ kg} + 10 \text{ kg} + 500 \text{ g} + 275 \text{ g} + 225 \text{ g}$$

$$= (7 + 10) kg + (500 + 275 + 225) g$$

$$= 17 \text{ kg} + [775 + 225] \text{ g}$$

$$= 17 \text{ kg} + 1,000 \text{ g}$$

$$= 17 \text{ kg} + 1 \text{ kg}$$

$$= 18 \text{ kg}$$

Strategies

- Estimate
- Use smaller numbers
- Draw a picture of model (number line, bar model, diagram, and so on
- Write an equation with the unknown
- Use the standard algorithm
- Find a hidden question
- Convert measurement units first
- Make a benchmark number

[Associative property]

(Convert measurement units)

Example 2

A tailor used 1 m, 35 cm of cloth to make a shirt and 2 m, 15 cm to make trousers.

What is the total length of cloth used by the tailor to make a shirt and trousers?

Solution [V]



The total length = 1 m + 35 cm + 2 m + 15 cm

$$= (1 + 2) m + (35 + 15) cm$$

[Commutative and associative]

$$= 3 m + 50 cm$$

$$= 3 \, \text{m} \text{ and } 50 \, \text{cm} = 350 \, \text{cm}$$

Another strategy

Convert measurement units first

$$1 \,\mathrm{m}, 35 \,\mathrm{cm} = 135 \,\mathrm{cm}$$

$$2 \, \text{m}$$
, $15 \, \text{cm} = 215 \, \text{cm}$

The total length =
$$135 + 215$$

Use Break up and Bridge strategy

$$135 = 100 + 30 + 5$$

$$215 = 200 + 10 + 5$$

$$300 + 40 + 10 = 350 \, \text{cm}$$

[·] Ask your child what strategy he/she decided to use, and why he/she chose it.

Example 3

A fish tank with a capacity of 92 liters is filled with 23,000 milliliters of water.

How many more liters of water are needed to fill it up completely?

Solution [V



Convert measurement units first.

 $23.000 \text{ mL} = 23 \text{ L} \{ \text{Think} : 1,000 \text{ mL} = 1 \text{ L} \}$

Number of liters needed to fill up the tank

[Standard subtraction algorithm]

Another way to subtract 92 - 23

Add to subtract strategy

$$23 + 7 = 30$$

$$30 + 60 = 90$$

$$90 + 2 = 92$$

$$50.7 + 60 + 2 = 69$$

Then
$$92 - 23 = 69$$

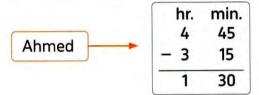
Example 4

Ahmed studied from 3:15 - 4:45. His sister, Sarah studied from 4:30 - 6:15

Who studied longer and by how much?

Solution W





The time of Ahmed = 1 hr, and 30 min.

$$= 60 + 30 = 90$$
 min.

hr. min. (5) K 15 (75) [60 + 15]Sarah 45

The time of Sarah = 1 hr. and 45 min. = 60 + 45 = 105 min.

So, Sarah studied longer than Ahmed and the difference = 105 - 90 = 15 min.

check your understanding

- 1. Two wooden planks of lengths 12 m, 60 cm and 18 m, 63 cm are glued together to make a long wooden bridge. What is the total length of the bridge?
- 2. Ashraf purchased 7 kg, 200 g of sugar, 9 kg, 395 g of rice. What is the total mass which Ashraf purchased?

Notes for parents:

Ask your child to use different strategies to solve the problems.



Applications of Measurement 1 [Addition and Subtraction]

		/
F	rst : Problems involving length	Strategies
100	One box is 44 cm, 5 mm tall. Another box is 35 cm. tall. How tall will the boxes be if both are stocked one on top of the other?	 Estimate Use smaller numbers Draw a picture of model (number line, bar model, diagram, and so on) Write an equation with the unknown Use the standard algorithm Find a hidden question Convert measurement units first Make a benchmark number
2.	Sameh has 63 m of ribbon. If he cuts 56 m, 21 cm ribb be left?	on from it, what length of ribbon will
		·
3.	Rania is measuring two ant lines. Colony A's ant line ant line is 500 millimeters long. How many centimeters	
••		s long are the two ant lines together? n ant from Colony B walked 3,000

Second:	Problems	involving	mass
---------	-----------------	-----------	------

6.	Zeina purchased 8 kilograms of sugar, 10 kilograms of flour, 500 grams of cocoa, 225 grams of pecans, and 275 grams of coconut. What is the total mass of her groceries in kilograms?
7.	In Colony A, the ants collect 950 grams of food. If they consume 25 grams of food on Monday and 37 grams of food on Tuesday, how many grams of food are left?
8.	The potatoes Aya bought weight 2 kilograms, 920 grams. Her onions weighed 1,075 grams less than the potatoes. How much did the potatoes and onions weight together?
	Ali's cat weighs 7 kilograms and his dog weighs 17 kilograms. When Ali took them to the vet, he learned that his cat gained 450 grams and his dog gained 120 grams. How much do his two pets weigh in all now?
Th	ird : Problems involving capacity
10 .	A fish tank with a capacity of 100 liters is filled with 20,000 milliliters of water. How many more liters of water are needed to fill it up completely?
11.	A milkman sold 46 L, 200 mL of milk on 3 days of a week and 53 L, 195 mL of milk in the next 2 days. What quantity of milk did he sell in the 5 days?
12.	Mr. Emad bought four 2-liter bottles of soda for the Primary 4 picnic. If there were 2 liters and 829 milliliters of soda remaining at the end of the picnic, how many milliliters of soda did the students drink?

Fourth: Problems involving time

- 13. A bus leaves for Cairo at 4:30 P.M. It takes 1 hr, 25 min. to reach there. At what time will it reach at Cairo?
- 14. The duration of a film show is 3 hr, 15 min. It starts at 6:30 P.M. When will it end?
- 15. A pharaoh ant grows from egg to adult in 45 days. A carpenter ant grows from egg to adult in 12 weeks. Which species takes longer to grow from egg to adult? How much longer?
- 16. Worker ants take power naps totaling up to 250 minutes a day. A queen ant may sleep up to 9 hours a day. Which ant sleeps longer and by how many minutes?

Challenge

17. Amal has a rope of length 40 m. She gave 12 m, 53 cm to Amgad, 18 m, 35 cm to Bassem and 9 m, 7 cm to Ayman. What length of rope is still left with Amal?



Multiple Choice Questions

Choose the correct answer.

- Shaimaa poured 5 L of water into a beaker. During an experiment, she added 200 mL of water. How much water was in the beaker at the end of the experiment?
 - **A.** 205 mL
- B. 2,500 mL
- C. 4,800 mL
- D. 5,200 mL
- 2. Bassem bought 3 meters of rope. He then cut off 170 centimeters of rope to glue around the edge of a pot. How many centimeters of rope does Bassem have left?
 - **A.** 173
- B. 470
- C. 130
- D. 167

- 3. Hany ran 1,800 meters on Saturday and 3 km, 200 m on Sunday. How many meters did be run in all?
 - **A.** 5

- B. 1,400
- C. 4,000
- D. 5,000
- 4. A box contains 2 bags of sugar. If the mass of each one is 1 kg and 300 g, what is the total mass in grams?
 - A. 600
- **B.** 2,600
- **C.** 2,800
- **D.** 1,300

- 5. If Vector studied from 4:10 to 5:00, then he studied _____ minutes.
 - **A.** 60

B. 110

C. 40

D. 50

- 6. Peter is over weight. He is 105 kg. If his aim his aim is to loss 500 g per week, then Peter's mass after 2 weeks is kg.
 - **A**. 104
- **B**. 105
- C. 106
- **D**. 107
- 7. Mr. Bassem bought 3 cartons of juice which are 2 liters each. If his three children finished 4,700 milliliters, then the left of juice is ______ mL
 - **A.** 2,300
- B. 2,700

C. 300

D. 1,300



Applications of Measurement 2 [Multiplication and Division]



Example 1

Wael has a 20 meter-long piece of wood. He wants to cut it into 4 equal lengths. How long should each cut piece be in meters? How long will each of these pieces be in centimeters?

Solution [V]

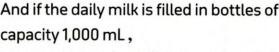


- The length of each piece in meters = $20 \div 4 = 5$ m [Think: $4 \times 5 = 20$]
- The length of each piece in centimeters = 5 × 100

= 500 cm [Think : 1 m = 100 cm]



A cow gives 22 Land 500 mL of milk daily. If the milkman has 10 cows, how much milk does he got in liters in a day? And if the daily milk is filled in bottles of



how many bottles will be required?

Solution [V]



- 22 L,500 mL = 22,500 mL
- The milk from 10 cows in mL = 22,500 × 10 = 225,000 mL The milk from 10 cows in L = $225,000 \div 1,000 = 225 L$
- The capacity of one bottle is 1,000 mL = 1 L Then the milkman needs 225 bottles.



 In this lesson, your child use multiplication and division to solve multistep story problems involving length, mass, capacity, and time.



133

Example 3

A box can carry a total mass of 10 kg. Laptops have to be packed inside the box. If the mass of each laptop is 2,000 g, how many laptops can be packed inside the box?

Solution W



- The mass of each laptop = 2,000 g = 2 kg (Think: 1,000 g = 1 kg)
- The number of laptops can be packed inside the box = $10 \div 2 = 5$ laptops

Example 4

Mona is stringing beads to make a necklace. She is using 30 of the 8 mm beads, 70 of the 4 mm beads, and 40 of the 2 mm beads. How long will her finished necklace be in cm?

Solution 1



 $30 \text{ of } 8 \text{ mm} = 30 \times 8 = 240 \text{ mm}$

 $70 \text{ of } 4 \text{ mm} = 70 \times 4 = 280 \text{ mm}$

and 40 of 2 mm = $40 \times 2 = 80$ mm

So, the length of her finished necklace = $240 + 280 + 80 = 600 \text{ mm} = 600 \div 10 = 60 \text{ cm}$

Example 5

Salwa is a runner. She spends half an hour every day running.

How many minutes in total does she run for during a 9-day period?

Solution W



What she runs each day = Half an hour = 30 min.

What she runs for during a 9-day period = $30 \times 9 = 270$ min.

check your understanding

In a relay race, 4 people ran 3,000 meters each. In a distance race, John ran 15 kilometers.

Who ran farther, the whole relay team or John? How much farther?

Notes for parents:

- Tell your child that multistep problem needs to know what information do you have to help you solve the problem.
- · Help your child read and understand to figure out the problem and use the information to decide which operation to use.

Exercise

Applications of Measurement 2 [Multiplication and Division]

	REMEMBER UNDE	RSTAND OAPF	PLLY		ROBLEM SOLVING	From the school boo	k
Fi	rst : Problems inv	olving lengt	th				
1.						cut it into 3 equal lengths. vill each of these pieces be	
2.	An ant may walk up will the ant walk?	to 5 km per d	ay.	lf	the ant continues th	s for 20 days, how many met	ers
3.	Sara travelled 9 d How many kilomete					meters each day.	
Se	cond : Problems	involving m	as	ss			
4.	Ehab is a weightl week. If he does that					is aim is to gain 500 grams p he end ?	er
5.	the first of the state of the s	4. 1.			000 grams of food ea y days will the food la	ch day. If the ants have st ?	
6.						I 10 ants walking by. If each now much weight was being	

Third	Prob	lems	invo	lvina	capacity
HIIII	1 100	101113	11110	IVIIIG	capacity

7.	A water purifier cleans 10 L ,50 mL of water each day. How much water will be cleaned by
0	the cleaner in 10 days?

- 8. Ayman is a runner. While Ayman is in training, he needs to drink 500 milliliters of water 4 times per day. How many liters of water will that be for 1 week?
- 9. Mostafa has 32 liter bottles of soda. If he divides the soda equally between himself and his 7 friends, how much soda will each person have?

Fourth: Problems involving time

- 10. Samira is studying for an upcoming math test. If she studies for 30 minutes a day, how many hours will she have spent studying in 8 days?
- 11. Amany is a swimmer. She spends half an hour every day swimming. How many minutes in total does she swim for during a 5-day period?

 (Aswan 23)

Challenge

12. An ant is at the bottom of a 20-meter deep well and is trying to get to the top. Each day it climbs 4 meters up, but each night it slides back 2 meters. How many days does it take for it to get out of the well?

Multiple Choice Questions

Choose the correct answer.

1.	Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes ,						
	we			[Giza – Awseem 23]			
	A. add 6 with 60)	B. add 6 with 2	24			
	C. multiply 6 by	60	D. multiply 6 b	y 24			
2.	A building is 20 i	meters tall. A bridge is 5 me	ters tall. How many t	imes the building is taller			
	than the bridge	?		[Alex Al-Agamy 23]			
	A. 3	B. 4	C. 15	D . 10			
3.	Sami has 25 met	ter-long piece of cloth. If		ed 10 days continuously.			
	he wants to cut i	t into 5 equal pieces, the	He travelled 4,000 meters each				
	length of each o	ne equals	day, then he w	alk in all about ————			
			kilometers.				
	A. 4 m	B. 5 m	A. 4	B. 40			
	C. 50 cm	D. 125 cm	C. 400	D. 4,000			
5.	If Mohamed ride	s his cycle 10 km per day	6. If the total mass of 10 balls having same				
0	, then he covers	in 5 days.	mass is 130,00	0 grams, then the mass			
			of each ball is	kg.			
	A. 2 km	B. 5 km	A. 130	B. 1300			
	C. 5,000 m	D. 50 km	C. 13	D. 13,000			
7.	If ants walk abou	it 3,000 meters each	8. An ant walks u	p to 2 km per day. If the			
0	day, then the an	ts walk ———— km	ant continues t	this for 10 days, then the			
	in 5 days.		ant will walk al	oout ——— meters.			
	A. 3	B . 150	A . 200	B. 2,000			
	C. 15,000	D. 15	C . 20,000	D . 200,000			

Unit Three Assessment



1. Choose the correct answer.

- **1.** 5 kg = 5,000 ———
 - A. m
- B. day

C. g

D. L

- 2. 9 m 80 cm = ____ cm
 - A. 1
- **B.** 10

C. 100

D. 820

- 3. _____L = 17,000 mL
 - A. 17
- **B.** 170

C. 1,700

D. 170,000

4. 1 day and 6 hours = hours

(Cairo 23)

- A. 7
- **B.** 30

C. 66

D. 36

- **5.** 5,050 mL = L , 50 mL
 - **A**. 5
- **B.** 50

C. 500

- **D**. 5,000
- 6. The elapsed time from 3:50 A.M. to 7:00 A.M. is _____
 - A. 3 hr, 50 min

B. 3 hr, 10 min

C. 4 hr, 10 min

D. 4 hr, 50 min

- **7**. 17 ton 7,000 kg
 - A. >
- B. =

C. <

D. otherwise

2. Complete each of the following.

- 1. 8 kg, 37 g =______ g
- **2.** 6:34 1:25 =
- **3.** 6,000 kg = _____ ton
- **4.** 8:25 + 35 minutes = _____
- 5. 897 mm = ____ cm , ___ mm
- **6.** 31,310 g = _____ kg , ____ g
- 7. 8 meters, 45 cm = ____ cm [El-Monofia Berket El-Sabaa 23]
- **8.** 9,000 mL = _____ liters

(Souhag 23)

3. Choose the correct answer.

1. 5 L , 13 mL = ____mL

[El-Monofia - Quesna 23]

- A. 513
- **B.** 5,013

C. 50,013

D. 500,013

2. 6 minutes and 30 seconds = seconds

[Cairo - El-Marg 23]

- A. 630
- **B.** 390

C. 330

D. 306

3. 5 kilometers and 45 meters = meters

(Cairo - El-Salam 23)

- A. 5,450
- B. 545

C. 5,045

D. 4,055

4. 6 liters = _____mL

(Cairo 23)

- A. 6,000
- **B**. 600

C. 60

D. 60,000

5. 5 m = ____ cm

[El-Beheira - Hosh Essa 23]

- A. 5
- **B.** 50

C. 500

D. 5,000

6. 1 week and 3 days = _____ days

(Giza 23)

- A. 7
- **B**. 8

C. 9

D. 10

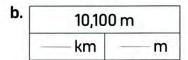
- **7.** 35 kg and 35 g = _____ g
 - **A.** 3,535
- **B.** 35,000
- C. 35,035
- **D.** 53,053

4. Answer the following.

- A fizzy can of mass 300 g , Jana bought 6 cans.
 What is the total mass of cans in kilograms and grams?
- 2. Sarah purchased 3 kg, 400 g of sugar and 5 kg, 217 g of rice. What is the total mass which Sarah carried?
- 3. 10 books of height 8 cm, 5 mm each are stacked over one another. What is the total height so obtained?
- 4. Find each missing number.

а. Г	_	– mL
	9 L	450 mL

C.	7,00	5 g
	kg	g



d. 7,500 kg



THEME ONE

Number Sense and Organit

LIND A

Area and Perimeter

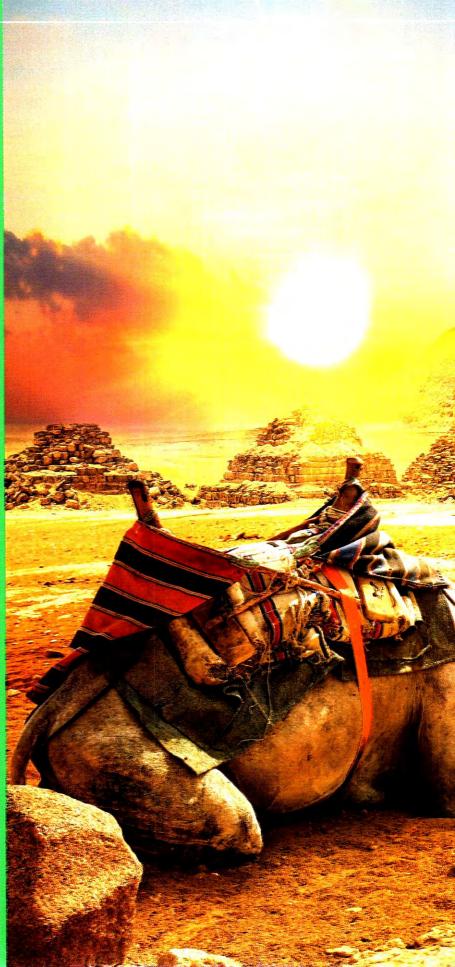
▶ Concept 1:

Explore Area and Perimeter

Fast Fact

The Great Pyramid of Giza (also known as the pyramid of Khufu) is the largest of the three pyramids. Its base is just like a square, the length of each side at the base averaging 230 meters.

What is its perimeter ?!



Concept 1

Explore Area and Perimeter



1

Finding Perimeter

Learn 1 Using formula to find the perimeter of a rectangle



Problem

Omar is a farmer. His rectangular farm is 60 m long and 40 m wide.

He wants to install a fence all around his farm.

What is the length of the fence?





Remember

- Perimeter is the distance around the figure.
- Each two opposite sides in the rectangle are equal in length.

You can use a formula to find the perimeter of
a rectangle. Where "P" stands for perimeter,
"l" for length and "w" for width.

Rectangle	Perimeter	Formula
l	Perimeter = length + width + length + width	P=l+w+l+w
w l	or Perimeter = [2 × length] + [2 × width] or Perimeter = 2 × (length + width)	or P = [2 × l] + [2 × w] or P = 2 × [l + w]

So, the length of the fence =
$$60 + 40 + 60 + 40$$
 [Think: P = l + w + l + w]
= $100 + 100 = 200 \text{ m}$

Or the length of the fence =
$$(2 \times 60) + (2 \times 40)$$
 [Think: P = $(2 \times 1) + (2 \times w)$]
= $120 + 80 = 200 \text{ m}$

Or the length of the fence =
$$2 \times (60 + 40)$$
 [Think: $P = (2 \times (l + w))$]
= $2 \times 100 = 200 \text{ m}$

Notes for parents:

 Make sure your child understand that a formula is a rule that tells how to solve a problem.



Learn 2 Using formula to find the perimeter of a square

• All squares are rectangles. Square has 4 equal sides.

You can use a formula to find the perimeter of a square.

Where "P" stands for perimeter and "s" stands for side length.

Square	Perimeter	Formula
S	Perimeter = side + side + side + side	P=s+s+s+s
s s	or	or
S	Perimeter = 4 × side	P = 4 × s

For Example:

To find the perimeter of the opposite square use the formula

$$P=4\times s$$

= $4\times 3=12 \text{ cm}$



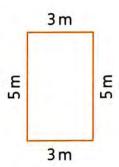


3 cm

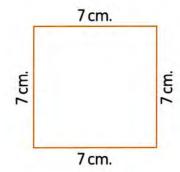
Example

Calculate the perimeters of the following shapes. Use different formulas to solve each problem.

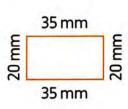
a.



b.



C.



Solution [7

- a. First formula: $P = (2 \times 1) + (2 \times w) = (2 \times 5) + (2 \times 3) = 10 + 6 = 16 \text{ m}$
 - Second formula : $P = 2 \times (l + w) = 2 \times (5 + 3) = 2 \times 8 = 16 \text{ m}$
- **b.** First formula: P = s + s + s + s = 7 + 7 + 7 + 7 = 28 cm
 - Second formula : $P = 4 \times s = 4 \times 7 = 28$ cm
- Remind your child to take careful note of the measurement unit used in each problem.
- Ask your child to find the perimeter of a window in his/her room using a formula.

c. • First formula: P = l + w + l + w = 35 + 20 + 35 + 20

• Second formula: $P = 2 \times (l + w) = 2 \times (35 + 20) = 2 \times 55 = 2 \times (50 + 5)$

 $= 100 + 10 = 110 \, \text{mm}$



Example 2

Ahmed wants to make a rectangular carpet of perimeter 12 m.

Draw different rectangles that could represent his carpet.

Solution [V]

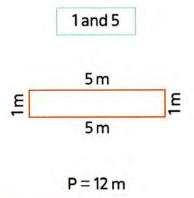


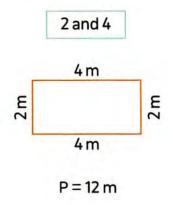
To find different rectangles of perimeter 12 m, do as follows:

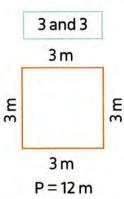
1. Find half of perimeter [half of perimeter = l + w]

$$1 + w = 12 \div 2 = 6 \text{ m}$$

2. Find two numbers their sum is 6, these two numbers are length and width of the required rectangle







2 cm

check your understanding

Find the perimeter of each of the following shapes. 2 cm 3 cm 4 cm 6 cm d. b. a. C. 4cm 4cm 6cm 5cm 6cm 6cm 4 cm 6 cm

3 cm

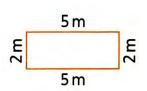
Notes for parents:

• Review the distributive property using numbers rather than measurements.

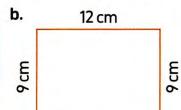
Finding Perimeter

- PROBLEM SOLVING
- From the school book
- 1. Use the formula P = l + w + l + w to calculate the perimeter of each of the following rectangles.

a.

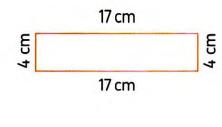


P = -



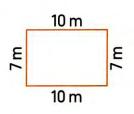
12 cm

C.



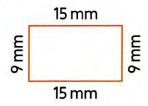
2. Use the formula $P = (2 \times l) + (2 \times w)$ to calculate the perimeter of each of the following rectangles.

a.



P = -

b.



P =

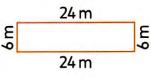
b.

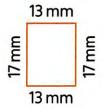


P = -

3. Use the formula $P = 2 \times (l + w)$ to calculate the perimeter of each of the following rectangles.

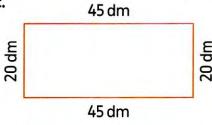
a.





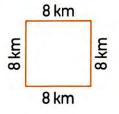
P = -

C.



4. Use the formula $P = 4 \times s$ to calculate the perimeter of each of the following squares.

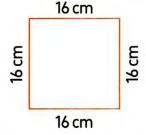
a.



P = -

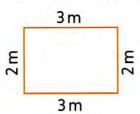
b.

P =



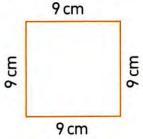
5. Calculate the perimeter of each of the shapes that follow. Use two different formulas to solve each problem. Show your work.

a.



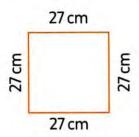
- · First formula:
- Second formula:

b.

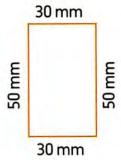


- · First formula:
- Second formula:

C.



d. 🛄



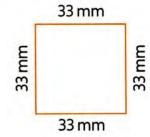
- · First formula:
- Second formula:

- First formula:
- Second formula:

e. 🛄



f.



- First formula:
- Second formula: -

- · First formula:
- Second formula:

6. Complete.

- a. The perimeter of the rectangle = (length + width) ×
- [Cairo El-Salam 23]
- **b.** A rectangle has length (l) and width (w), its perimeter =

[Cairo 23]

c. If the side length of a square is (s), then its perimeter =

[Alex. - Al-Agamy 23]

- d. The perimeter of the rectangle its length is 7 cm and its width is 5 cm
 - equals ____ cm

[Souhag 23]

- e. A square of side length 3 cm, then its perimeter = ____ cm [Cairo Rod El-Farag 23]
- f. A carpet in the shape of a square of side length 3 m, its perimeter = _____ m [Giza 23]

7.	A rectangular gymnasium is 7 meters long and 4 meters wide .Find its perimeter. [Port Said 22]						
8.	Find the perimeter of the rectangle with a length of 8 cm and a width of 6 cm [Alex First Montaza 23]						
9.	Find the perimeter of the rectangle whose length is 16 cm and its width is 14 cm. (Cairo 23)						
10.	Omar is building a rectangular fence around his garden. The length is 7 meters and the width is 5 meters. How many meters of fencing will he need to build?						
11.	Sarah is putting a border around the edge of a square cake. One side of the cake is 30 centimeters long. How long will the border of Sarah's cake be?						
12.	Sherif is building a square picture frame. Each side will be 36 millimeters long. What will the perimeter of the frame be?						
13.	A soccer team is roping off part of a field to play soccer. To have enough room for a large crowd, they need a space that is 105 meters long by 68 meters wide. How much rope will they need for this part of the field?						
14.	A carpenter ant walked a perimeter of 100 centimeters. Draw two different rectangles that could represent its walk.						

Multiple Choice Questions

Choose the correct answer.

1. A rectangle its length is l and its width is w What is its perimeter?

[Cairo 23] [Alexandria - Montaza 22]

- A. 1+w
- B. L×w
- C. $2 \times [l + w]$
- D. $[2 \times l] + w$
- Which choice shows the formula for the perimeter of a square?

[P = perimeter, s = side length]

- A. P=4+s
- B. P=4×s
- C. P=s×s
- D. P=s+s

3. The perimeter of the rectangle whose length is 8 cm, width is 5 cm equals—

[Giza - Abo El Nomros 23]

A. 13

B. 26

C. 30

D. 40

- 4. The perimeter of the rectangle of 8 cm long and 2 cm wide equals
 - **A.** 20 cm
- B. 10 cm
- C. 16 cm
- D. 6 cm

5. A square of side length 8 cm, then its perimeter = ____ cm

[Alex. - West 23]

A. 16

B. 24

C. 32

D. 40

6. A square whose side length is 5 cm, then its perimeter is ____ cm

[El-Monofia - Sers El Layyan 23] (Cairo - El Nozha 23)

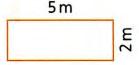
A. 20

B. 25

C. 15

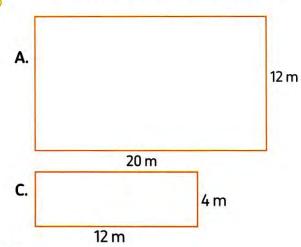
D. 35

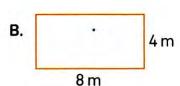
- 7. The perimeter of the opposite rectangle equals
 - A. 10 m
- B. 20 m
- C. 14 m
- D. 14 cm

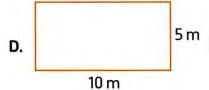


[Cairo - El Nozha 23]

8. Which of the following rectangles has perimeter of 32 m?







2

Finding Area



Learn 1 Using formula to find the area of a rectangle

Sameh tiled the rectangular floor in his front hall. He used square tiles that measure 1 meter on each side.

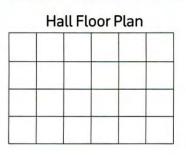
How many tiles did he use?

One Way

You can count square units to find the area.

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24

Record your answer in square units. A = 24 square meters.



Remember

Area is the number of square units needed to cover the surface of a figure.

Another Way

You can also use a formula.

The formula for the area of a rectangle is

Area = length \times width Or $A = l \times w$

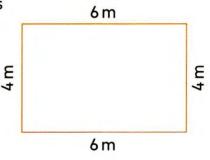
Use the formula to find the area.

 $A = l \times w$

 $A = 6 \times 4$

A = 24 square meters

So, Sameh used 24 tiles.



Math tip

You can write square meters as m²

, and write square centimeters as cm²

Notes for parents:

Ask your child to find the area of a carpet in his/her room using a formula.

Learn 2 Using formula to find the area of a square

The formula for the area of a square is

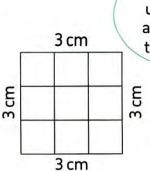
Area = side length \times itself Or A = $s \times s$

For Example:

The area of the opposite square

$$A = s \times s = 3 \times 3$$

= 9 square centimeters (cm²)



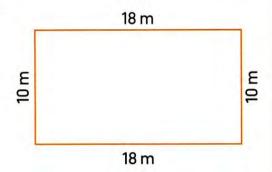
Try to count square units to find the area, you will get the same result.



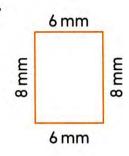
Example 1

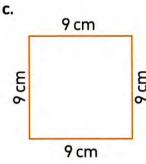
Find the area of each of the following.

a.

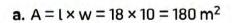


b.





Solution 🕎



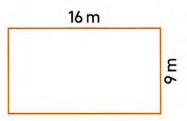
c.
$$A = s \times s = 9 \times 9 = 81 \text{ cm}^2$$

b.
$$A = 1 \times w = 8 \times 6 = 48 \text{ mm}^2$$

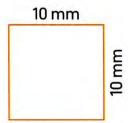
Example 2

Find the area and perimeter of each figure.

a.



b.



Remember

- · Perimeter: Measurement of the distance around the shape.
- Area:

Measurement of the space inside the shape.

Notes for parents:

Ask your child to use a formula to calculate the area of the door of his/her room.

Solution [V]

a.
$$A = l \times w = 9 \times 16 = 9 \times [10 + 6] = 90 + 54 = 144 \text{ m}^2$$

b. $A = s \times s = 10 \times 10 = 100 \text{ mm}^2$
 $P = 2 \times [l + w] = 2 \times [9 + 16] = 2 \times 25$
 $P = 4 \times s = 4 \times 10 = 40 \text{ mm}$

b.
$$A = s \times s = 10 \times 10 = 100 \text{ mm}^2$$

 $P = 4 \times s = 4 \times 10 = 40 \text{ mm}$

Example 3

A small fish farm in the shape of a rectangle. Its dimensions are 10 meters and 8 meters. What is the area of the fish farm?

Solution [V

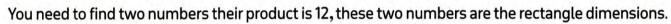
$$A = 1 \times w = 10 \times 8 = 80 \text{ m}^2$$

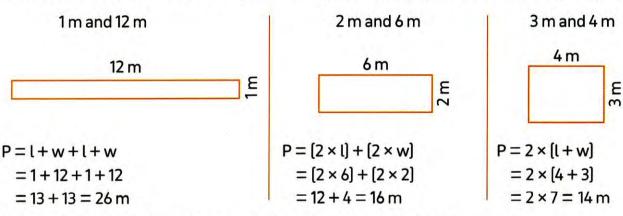
Example 4

The area of a piece of paper in the shape of a rectangle is 12 square meters.

What is the perimeter of this piece? Draw your answer and write the dimensions.

Solution [V]





You can use different formulas to calculate the perimeter of a rectangle.

check your understanding



Challenge your child to draw many rectangles with area 30 cm².

Finding Area

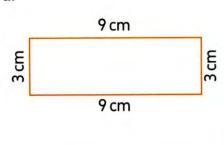


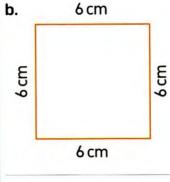




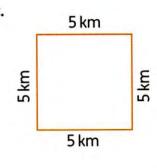
- PROBLEM SOLVING
- From the school book
- 1. Write the formula of the area of each rectangle or square, then find its area.

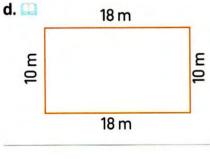
a.

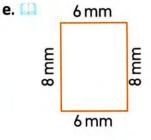




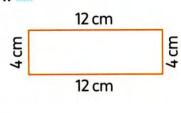
C.





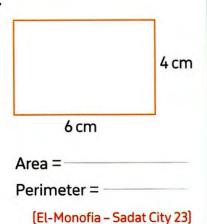


f. []

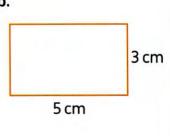


2. Find the area and perimeter of each figure.

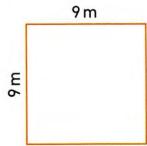
a.



b.



c.



Area =

Perimeter =

[El-Menia 23]

Area =	
Dorimeter -	

3.	3. Complete.	
	a. Area of square = ×	lex West 23
	b. A rectangle of length 7 cm and width 4 cm, then its area = $-$ cm ² (Cairo -	Rod El Farag 23
	c. A rectangle of length 8 cm, width 3 cm, then its area = $-$ cm ²	
	(El-Behiera 23) (Cair	o – El Marg 23
	d. A garden in the shape of a square whose side length is 9 meters,	
	then its area = square meters. [Alex Al Agamy 23] (Cairo	- El Salam 23
	e. The area of a rectangle its dimensions are 5 cm and 3 cm is ————	
	f. A rectangle its width is 4 cm and its length is 6 cm, then its area is	El-Sharkia 22
	g. The length of a rectangle is 10 mm and the width is 8 mm, then the area of t	
	h. A square whose side length is 4 meters, then its area is	Dir Mawas 22
	i. Area of square which its side length 6 cm is — cm ² (El-Behiera -	
5.	picture, what is the area of the glass piece? [El- 5. Calculate the area of a rectangle if its length is 9 cm and width is 5 cm	-Kalyoubia 22 (Cairo 23
6.	6. Find the area of a square if its side length is 5 cm.	
7.	7. A square–shaped room has a side length 3 meters. What is the area of the grour room in square meters? (Cairo	nd of the - El Nozha 23
8.	8. Amgad has a garden in squared shape with side length 6 m. What is the area of garden?	this (Giza 23)

ROBLEM SOLVING

Challenge

Lesson 2

REMEMBER OUNDERSTAND APPLY

15. What is the length of a rectangle, if its area is 24 cm² and its perimeter equals a number between 20 cm and 30 cm?

Multiple Choice Questions

Choose the correct answer.

1. If the length of a rectangle is l and its width is w, then its area A =

[Cairo - El Shrouk 23]

A.
$$A = l - w$$

C.
$$A = l \times w$$

(Ismailia 23)

B. width

D. height

3. The area of the opposite figure equals

A. 24 km

B. 36 km

C. 36 km²

D. 24 km²



Ē

4. A rectangle its length is 8 cm and its width is 4 cm, then its area = --- cm²

[Giza - 6th October 22]

A. 32

B. 12

C. 24

D. 64

5. Area of rectangle of length 8 cm and width 5 cm equals

[El-Dakahlia 22]

A. 3

B. 13

C. 26

- D. 40
- 6. A rectangle of length 20 cm and width 10 cm, then its area equals ———— cm²

[Giza - El-Haram 22] [El-Monofia - Sers El-Layyan 23]

 cm^2

- **A.** $2 \times 20 + 2 \times 10$
- **B.** 20 + 10
- C. 60

- **D.** 200
- 7. A rectangle of length 9 cm, width 6 cm, then its area = cm² [El-Monofia Quesna 23]

A. 54

B. 30

C. 45

- **D**. 15
- 8. The area of a rectangle with 4 cm long and 3 cm wide equals cm² (Cairo El-Nozha 23)

D. 20

A. 12

B. 16

C. 10

- **D**. 20
- 9. A square whose side length is 5 cm, then its area = cm²

[Cairo - El-Nozha 23]

A. 21

B. 25

C. 12

- **D.** 10
- 10. The area of the square whose side length is 6 cm equals —
- cm²

A. 11

B. 30

C. 24

D. 36

(Souhag 23)

3

Unknown Dimensions

Learn 3

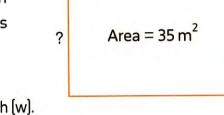
Use the area formulas to calculate the unknown dimension

First: The rectangle

Amal made a rectangular flower garden with an area of 35 square meters and its length is 7 meters.

How long is its width?

Use the formula to find the unknown width [w].



7 m

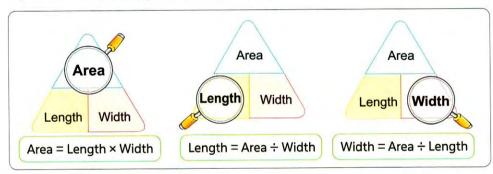
$$A = l \times w$$

$$w = A \div l$$

Area of a rectangle = length \times width

$$w = 35 \div 7 = 5 \text{ m}$$

So, the width of the garden is 5 meters.



Second: The square

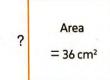
Remember

A square is of area 36 cm².

Area of a square = side length \times side length

What is its side length?

Use the formula to find the unknown side length.



$$A = s \times s$$

$$36 = s \times s$$

 $s = 6 \text{ cm} \text{ [because } 6 \times 6 = 36]$

So, the side length is 6 cm.

Hint

Look for a number if multiplied by itself gives the area.

Notes for parents:

 In this lesson, your child will apply area and perimeter formulas to solve for an unknown dimension in a rectangle or a square.



Learn 2

Use the perimeter formulas to calculate the unknown dimension

Perimeter

 $=36 \, \mathrm{cm}$

?

First: The rectangle

A rectangular piece of paper has a perimeter

28 cm and width 6 cm.

How long is its length?



Remember

- Perimeter of a rectangle = $(2 \times length) + (2 \times width)$
- Half of perimeter = length + width = perimeter ÷ 2
- Use the formula to find the unknown length [l].

$$P = 2 \times [l + w]$$

- Half of perimeter = $28 \div 2 = 14$
- Length = half of perimeter width
- Length = 14 6 = 8 cm

So, the length is 8 cm.

Second: The square

A square is of perimeter 36 cm.

What is its side length?



Remember

Perimeter of a square = side length \times 4

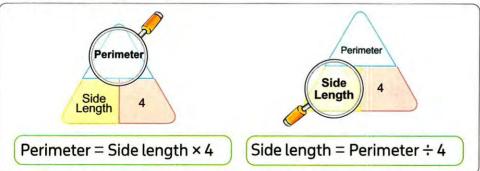
Use the formula to find the unknown side length (s).

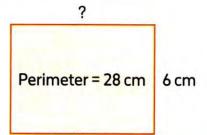
$$P = s \times 4$$

$$36 = 5 \times 4$$

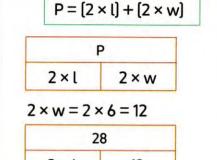
$$s = 36 \div 4 = 9 \text{ cm}$$

So, the side length is 9 cm.





Another Way Using Bar Model-



28	3
2×l	12

$$2 \times l = 28 - 12$$
 $2 \times l = 16$ $l = 16 \div 2 = 8 \text{ cm}$



Ask your child questions as: Which number if multiplied by itself you get 16, 25, 36, 49, ...?

Conclusion

Conclusion

In a rectangle

l = length, w = width, P = perimeter, A = area

$$A = l \times w$$

$$P=2\times[l+w]$$

•
$$l = [P \div 2] - w$$

$$\bullet w = A \div l$$

$$\bullet w = [P \div 2] - l$$

In a square

s = side length, P = perimeter, A = area

$$P = s \times 4$$

s is a number if multiplied by itself gives the area.

$$s = P \div 4$$

Example 1

- a. The area of a rectangle is 28 cm². If its width equals 4 cm, find its length and its perimeter.
- b. A square is of area 16 m². Find its side length and its perimeter.

Solution [V]



- a. $A = 28 \text{ cm}^2 \text{ w} = 4 \text{ cm } l = ?$
 - $l = A \div w = 28 \div 4 = 7 \text{ cm}$
 - $\bullet P = 2 \times [l + w]$

$$= 2 \times [7 + 4] = 2 \times 11 = 22 \text{ cm}$$

- **b.** $A = 16 \text{ m}^2 \text{ s} = ?$
 - $s = 4 \text{ m} [because } 4 \times 4 = 16]$
 - $P = s \times 4 = 4 \times 4 = 16 \text{ m}$

Example 2

- a. The perimeter of a rectangle is 20 m. If its length equals 6 m, find its width and its area.
- b. A square is of perimeter 32 cm. Find its side length and its area.

Solution [V]



a. $P = 20 \, \text{m}$ l=6 w=?

$$P \div 2 = 20 \div 2 = 10 \text{ m}$$

•
$$w = [P \div 2] - l = 10 - 6 = 4 m$$

• A =
$$1 \times w = 6 \times 4 = 24 \text{ m}^2$$

- **b.** P = 32 cm s = ?
 - $s = P \div 4 = 32 \div 4 = 8 \text{ cm}$
 - A = $s \times s = 8 \times 8 = 64 \text{ cm}^2$

Check your understanding

- 1. If the area of a rectangle is 35 cm² and its length equals 7 cm, find its width.
- 2. A square is of area 25 cm², find its side length and its perimeter.
- 3. If the perimeter of a rectangle is 18 cm and its width equals 3 cm, find its length and its area.
- 4. A square is of perimeter 40m. Find its side length.

Notes for parents:

• Revise with your child time table 4. Practise him/her how he/she can divide by 4.

on lesson 3 REMEMBER

-			-	,	•	^	_			ь
_		M	11		w	ч.	4	Λ.	N	
	U	L	ν	•	44	U	•	n	и	м

O APPLY

From the school book

1. Find the unknown side length based on the area given of each rectangle.

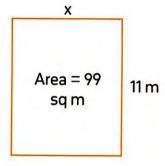
a.

7 cm Area = 28 X sq cm

b. 🛄

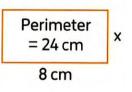
10 units Area = 50X sq units

C.

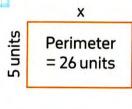


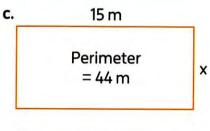
2. Find the unknown side length based on the perimeter given of each rectangle.

a.



b. 🛄





3. Find the unknown side length based on the area given of each square.

a.

b.

C.

4. Find the unknown side length based on the perimeter given of each square.

a.

Perimeter = 32 cm b.

Perimeter = 12 km C.

y Perimeter = 44 m

5. Complete each of the following.

a. The perimeter of a square is 20 cm, then its side length is _____ cm

[El-Behiera - Hosh Essa 23]

b. A square its perimeter equals 24 cm, then the side length = ____ cm [Alex. - El Montazah 23]

c. The length of the side of a square whose perimeter is 28 cm is ____ cm [Giza - Awseem 23]

e. The perimeter of a square is 36 cm, then the length of its side is _____ cm [Aswan - Kom Ombo 22]

f. A square is of area 49 km², then its side length is

g. A square has an area of 16 square centimeters, then its perimeter is _____ cm

[Cairo - El-Kobba 22]

h. If the perimeter of a rectangle is 26 cm, and its width is 4 cm, then its length is ——

i. A rectangle of perimeter 32 m, and its length is 9 m, then its area is

j. The area of a rectangle is 42 km^2 , and its width is 6 km , then its length is -

k. The area of a rectangle is 45 m², and its length is 9 m, then its perimeter is

6. Complete the following table of rectangles.

Length	Width	Area	Perimeter
a. 5 cm	10 cm		
b. ———	5 m	10 m ²	
c. 9 km		72 km²	
d . 6 dm			22 dm
е	2 mm		18 mm

7. Complete the following table of squares.

Side length	Area	Perimeter
a. 9 m		
b. ———	64 cm ²	
c. ———		24 mm

8.	A rectangular flowerbed in the city park has an area of 12 square meters. The width of the
	flowerbed is 3 meters. What is the length of the flowerbed?

9.	Ali sketched a rectangular painting with an area of 28 cm ² , the width of his painting is 4 cm
0	Find its perimeter.

0	Tahani is building a square picture frame for her father. The picture she has to frame has			
	an area of 49 square centimeters. What is the width and the length of her frame? Sketch			
	the frame and show your work.			

11.	Emad is building a garden with 26 m of fencing.
0	What is the length and the area of it if its width is 6 m?

12.	Mai walked once around the squared playground. She covered a distance of 40 m.
0	What is the area of this playground?

13. A rectangle is 6 meters wide. The length is 2 meters more than its width. What is the area and perimeter of the rectangle?

Challenge

14. Mathew has two pictures, both with an area of 36 cm². One is a rectangle with length 9 cm, and the other is a square. Which has the greater perimeter?

Multiple Choice Questions

Choose the correct answer.

1.	Length of a rectangle =	

2. If the area of a rectangle 35 cm² and its length 7 cm, then its width =

[El-Menia 23]

- A. Area ÷ length
- B. Area ÷ width
- **A**. 4 cm
- **B.** 5 cm

- C. Length × width
- D. Area × width
- C. 6 cm
- **D.** 7 cm

- 3. A square whose area 36 km², then its side length is km
 - A. 4

B. 5

C. 6

D. 9

[Alex. - First Montaza 23]

4. The side length of a square whose perimeter 28 is _____ cm. [Souhag 23]

8. A rectangle with area 15 cm² and

A. 7

B. 14

C. 5

D. 4

- 5. The perimeter of a square is 40 cm, then
 - its side length = ____ cm. (Cairo 23)
 - A. 4

- B. 1,600
- **C**. 160
- **D**. 10

- 6. The value of x is
 - **A.** 10 m
 - **B.** 20 m
 - C. 6 m
 - D. 4 m
- Perimeter = 20 m

X

6 m

- 7. The value of y is
 - A. 4 cm
 - B. 6 cm
 - **C.** 10 cm
 - **D.** 8 cm

У

Area = 16 cm^2

- width 3 cm. What is its perimeter?
 - **A.** 8 cm
- **B.** 15 cm
- C. 16 cm
- **D.** 16 cm²

- 9. A square with area 1 m² What is its perimeter?
 - A. 1m
- **B.** 2 m

C. 3 m

- D. 4 m
- Nahed wants to put a ribbon border around a blanket she is making. The width of the blanket is 3 meters. The perimeter of the blanket is 14 meters. How long is the length of the blanket?
 (Alexandria Borg El-Arab 22)
 - A. 17 meters
- B. 11 meters
- C. 8 meters
- D. 4 meters

Complex Shapes



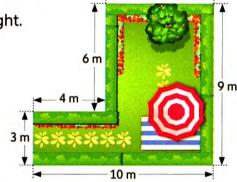
Learn How to find perimeter and area of complex figures?

Andy wants to put a fence around his garden.

The space he will use is shown at the right.

How much fence should he buy?

What is the area of his garden?



Find the perimeter

Add the lengths of the sides.

Perimeter = 10 + 3 + 4 + 6 + 6 + 9 = 38 m

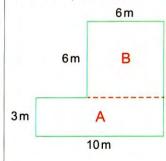
He should buy 38 meters of fence.

Find the area

There are many ways to calculate the area.

Step 1

Separate the figure into a rectangle A and a square B.



Step 2

Calculate the area of each figure.

Area of the rectangle A

$$A = l \times w$$

$$=10\times3$$

$$= 30 \text{ sq m}$$

Area of the square B

$$A = s \times s$$

$$= 6 \times 6 = 36 \text{ sq m}$$

Step 3

Add both areas to find the area of the whole figure.

$$30 + 36 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

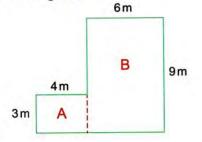
Notes for parents:

In this lesson, your child will learn and apply strategies for calculating the area and
perimeter of complex shapes. Your child will use a variety of strategies to break
shapes down into squares and rectangles to calculate their measurements.

Another Way to find area

Step 1

Separate the figure into a rectangle A and a rectangle B.



Step 2

Calculate the area of each figure.

Area of the rectangle A

Area =
$$l \times w$$

= $4 \times 3 = 12 \text{ sq m}$

Area of the rectangle B

Area =
$$l \times w$$

= $9 \times 6 = 54 \text{ sq m}$

Step 3

Add both areas to find the area of the whole figure.

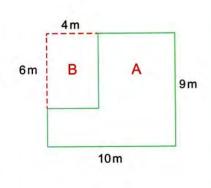
$$12 + 54 = 66 \text{ sq m}$$

The area of the garden is 66 square meters.

Another Way to find area

Step 1

Complete the figure as a big rectangle A and a small rectangle B.



Step 2

Calculate the area of each figure.

Area of the rectangle A

$$A = l \times w$$
$$= 10 \times 9 = 90 \text{ sq m}$$

Area of the rectangle B

$$A = l \times w$$

= $6 \times 4 = 24 \text{ sq m}$

Step 3

Subtract both areas to find the area of the required figure.

$$90 - 24 = 66 \, \text{sq m}$$

The area of the garden is 66 square meters.

Note

The area of a complex figure does not change when divided in different ways.



Notes for parents:

Make sure that your child understand the area of a complex figure does not change when he/she
calculate in different ways.

Example 1

Calculate the perimeter and area of the figure.

Solution [V]



First you should find the length of the unknown sides x and y

$$x = 23 - 13 = 10 \text{ m}$$

$$y = 18 - 6 = 12 \text{ m}$$

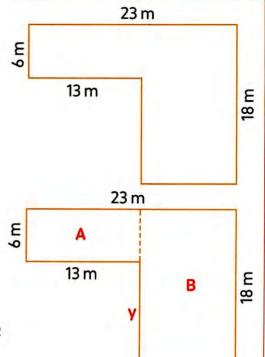
The perimeter = 23 + 18 + 10 + 12 + 13 + 6 = 82 m

The area = Area of section A + Area of section B

$$= [13 \times 6] + [18 \times 10]$$

$$= [10 + 3] \times 6 + 180$$

$$= (10 \times 6) + (3 \times 6) + 180 = 60 + 18 + 180 = 258 \text{ m}^2$$



Example 2

Combine these two simple shapes to form a complex shape.

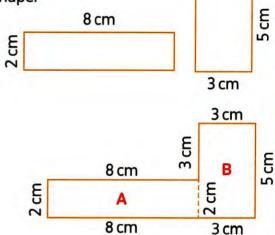
Sketch your shape, labeling the sides.

Then calculate the perimeter and the area of the complex shape.

Solution [V]

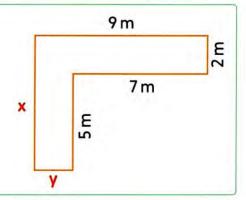


- The perimeter = 8 + 3 + 3 + 5 + 3 + 8 + 2 = 32 cm
- The area = Area of section A + Area of section B $= [8 \times 2] + [5 \times 3] = 16 + 15 = 31 \text{ cm}^2$



check your understanding

Find the perimeter and the area of the complex figure.



· When forming a complex shape out of simple shapes, the perimeter of this complex shape may be equal different results according to how you form this complex shape, but the area of the complex shape does not change.

Complex Shapes

REMEMBER

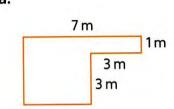
UNDERSTAND

PROBLEM SOLVING

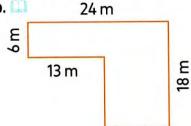
From the school book

1. Calculate the area and the perimeter of each complex shape. Show your work.

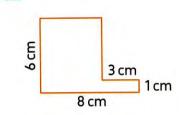


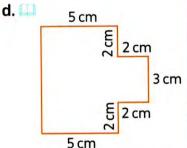


b. 📖

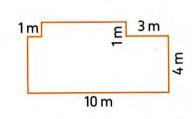


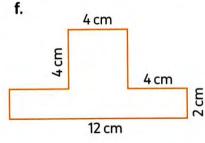
c. 💷





e.





Find the area of the opposite figure.





3 cm

3. Find the area and perimeter.

5 cm 6 cm (Ismailia 23)

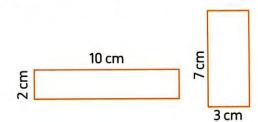
12 cm



6 cm

Challenge

4. Combine these two simple shapes into a complex shape. Sketch your shape, labeling the sides. Then, calculate the area and perimeter for the complex shape.

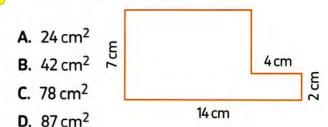


Multiple Choice Questions

Choose the correct answer.

- 1. What is the perimeter of the figure?
 - A. 10 cm
 - B. 12 cm
 - C. 13 cm
 - D. 15 cm

- 1cm 4cm 1cm 8
- What is the area of the figure?



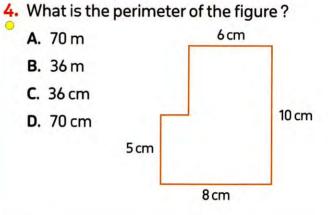
- 3. What is the area of the figure?
 - A. 54 m²
 - B. 32 m²
 - C. 32 cm²
 - D. 54 cm²

m6

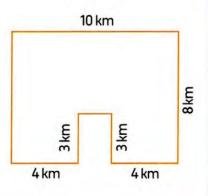
10 m

6m

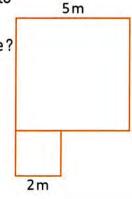
- A. 70 m
 - B. 36 m
 - C. 36 cm
- D. 70 cm



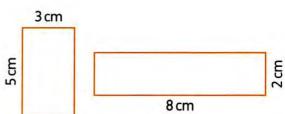
- 5. What is the area of the figure?
 - A. 74 m²
 - B. 42 km
 - C. 42 m
 - D. 74 km²



- 6. Two squares are joined to make a figure. What is the perimeter of the figure?
 - A. 7 m
 - **B.** 10 m
 - C. 24 m
 - D. 35 m



- 7. If you combine the two rectangles to make a complex figure, what is the area of the resulted figure?
 - A. 18 cm²
 - B. 31 cm²
 - C. 36 cm²
 - **D.** 40 cm^2



Unit Four Assessment



1. Choose the correct answer.

- 1. The area of the rectangle with 5 cm long and 3 cm wide equals
 - **A.** 16 cm²
- **B.** 15 cm
- C. 15 cm²
- D. 16 cm

6 cm

The

perimeter

 $= 24 \, \text{cm}$

2. In the opposite figure:

The value of y is

- A. 4 cm
- B. 5 cm
- C. 6 cm
- D. 7 cm

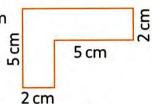


A. 14

B. 21

C. 19

D. 24



- 4. The perimeter of a rectangle with 15 cm long and 10 cm wide equals _____ cm
 - A. 150
- **B.** 50

C. 40

D. 35

- 5. Perimeter of square =
 - A. s×s
- B. l + w
- C. L×w
- D. s×4
- 6. The perimeter of a square of side length 10 m is m
- **A.** 30

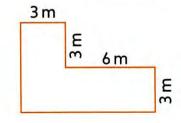
- **B**. 100
- **C**. 20
- D. 40
- 7. A rectangle its length is (l) and its width is (w), what is its perimeter? [Giza Awseem 23]
 - A. l+w
- B. l×w
- C. $2 \times [l + w]$
- D. $[2 \times l] + w$

2. Complete the following.

- 1. If the area of the opposite figure equals 25 m², then
 - the value of x is ——— m



- 2. The area of the opposite
 - figure equals m²
- 3. The area of the rectangle with 3 cm wide and 9 cm long
- equals ——— cm²



- 4. The perimeter of the rectangle = _____+
- 5. The area of a rectangle with 8 cm long and 2 cm wide equals the area of a square of
- side length ——— cm
- 6. The side length of a square = its perimeter ÷

7.	The perimeter of t	he rectangle whose length	is 6 cm an	d its width i	4 cm	s ——— cr
8.	A square of side lo	ength 5 units , then its peri	meter = _	uni	ts	[Cairo 2
3. Ch	oose the correct a	answer.				
	The area of a recta	angle whose length is 7 cm	and its wi	idth is 5 cm	equals	cm
0	A. 12	B. 24	C. 35		D . 30	Souhag 2
2.	The perimeter of the	ne square whose side lengtl	n is 6 cm is	cn	Giza -	Abo El-Nomros 2
0	A. 8	B. 12	C. 36		D. 24	4
3.	A rectangle its ler	ngth is 8 cm and its width i	s 2 cm, the	en its perime	eter = -	cm
0	A. 20	B. 16	C. 10			El-Behiera 2
4.	In the opposite fig	gure : The value of × is —	cm	Х	7	
0	A. 80	B. 2		The area	£	
	C. 6	D . 5		$= 20 \text{ cm}^2$	4	
5.	The area of the on	posite figure equals ——	cm ² [
0	A. 30	B . 50	Citi			Therese
	C . 400	D. 100		The area = 4	0 cm ²	The area = 10 cm ²
4	Area of square = s					
•	A. length		C. itself		D. 4	
7	[[[전경기] [[전경기] [[[] [[] [[] [[] [[]	= — × width	C. Itsett		D . 4	
	A. length		C. itself		D. 4	
	swer the following				***	
	Find the area of th			31	m _	
			7 n	0		
	Calandara Harana				ε	
0	Calculate the peri	meter of the opposite figu	re.		9cm	
3.	These two rectand	gles have the same area.				9 cm
	Find the length of	6 cr	n		X	
				E		^
				3cm		
			-			4 m
4.	Wael wants to pla	ce a wooden fence around	his vegeta	able garden		
	Each meter of fencing costs 10 L.E.					7 m
	Find the cost of th	e new fence.				
						9 m
						169

THEME TWO

Mathematical Operations and Algebraic Thinking

LING 5

Multiplication as a Relationship

- ► Concept 1 : Multiplicative Comparisons
- ▶ Concept 2: Properties and Patterns of Multiplication

Fast Fact

An adult grasshopper can jump 10 times its length straight into the air and 20 times its length horizontally without using its wings. That is, if a grasshopper is 5 centimeters long, it can jump a distance of 1 meter.



Concept 1

Multiplicative Comparisons



Lesson No.	Lesson Name	Learning Objectives
Lesson 1	Multiplicative Comparison	 Students will define multiplicative comparison. Students will model multiplicative comparison problems.
Lessons 2&3	Creating Multiplicative Comparison Equations	 Students will create equations to represent multiplicative comparison problems. Students will use letters to represent unknown quantities in equations.
	Solving Multiplicative Comparison Equations	Students will create and solve multiplicative comparison equations.

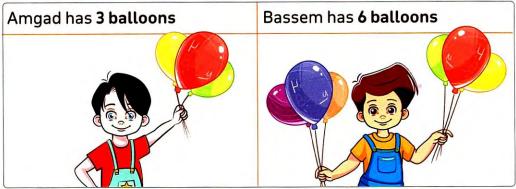
Multiplicative Comparison



Learn What is multiplicative comparison?

Multiplicative comparison means comparing two things or sets that need multiplication.

For Example: In a birthday party,



You can use multiplication as a way to compare between what they have as follows:

	Tape diagram	Multiplicative comparison statement	Multiplication equation
J	Amgad:	Dancer has builde as many	
	3 balloons	Bassem has twice as many balloons as Amgad has.	6=2×3
	Bassem:	Or 6 is two times the	
	3 balloons 3 balloons	number 3	

Remember

Multiplication is repeated addition.

So, you can rewrite a multiplication equation as repeated addition equation.

Hint_

 $6 = 2 \times 3$ means 6 is two times the number 3 Or 6 is three times the number 2 2

Notes for parents:

· Make sure your child understands that the "tapes" in the tape diagram represent equal groups. When constructing a tape diagram, each tape should represent the same quantity.

Example 1

Complete the multiplicative comparison statements. Use tape diagram or multiplication facts to compare.

- a. Compare 15 and 5. 15 is — times the number 5.
- **b.** Compare 50 and 10. 50 is times the number 10.

Solution [V]

- a. $3 = 3 = 3 \times 5$ b. $5 = 3 \times 5$ b. $5 = 3 \times 5$

Example 2

Rewrite each equation using multiplication.

a.
$$5+5+5=15$$

b.
$$3+3+3+3+3+3+3=21$$

a.
$$3 \times 5 = 15$$

b.
$$7 \times 3 = 21$$

Example 3

Fill in the blanks to complete the multiplicative comparison statement for each tape diagram.

8

is — times the number 8.

is — times the number 5.

Solution [V]

a. 48 is 6 times the number 8.

b. 40 is 8 times the number 5.

check your understanding

Complete the table. Write a comparison statement or a multiplication equation.

Comparison Statement	Multiplication Equation
21 days is 3 times as many as 7 days	
	36 = 9 × 4
30 fish is 5 times as many as 6 fish.	

[·] Children often confuse multiplicative comparison with additive comparison. For example, instead of multiplying by 4 to find a number 4 times the number 20, they might add 4.

Exercise on lesson 1

Multiplicative Comparison

Complete each of the following.

[Alex. - 23]

(Souhag - 23)

Rewrite each equation using multiplication.

Use tape diagram or multiplication facts to compare the numbers.

15 is — times the number 3.

— times the number 7. 28 is —

27 is times the number 9.

10 is — times the number 2.

- e. Compare 12 and 3. 12 is times the number 3.
- f. Compare 18 and 6. 18 is times the number 6.
- g. Compare 18 and 9. 18 is times the number 9.
- h. Compare 21 and 7. 21 is times the number 7.
- i. Compare 24 and 6. 24 is times the number 6.
- j. Compare 35 and 7. 35 is _____ times the number 7.
- 4. Fill in the blanks to complete the multiplicative comparison statement for each tape diagram.
 - a. 5 5 5 5

— is — times the number 5.

b. 8 8 8

is times the number 8.

C. 4 4 4 4

is times the number 4.

d. 2 2 2 2 2 2

— is — times the number 2.

e. 3 3 3 3 3 3 3 3

— is — times the number 3.

f. 6 6 6 6 6 6 6

is times the number 6.

g. 10 10 10 10

—— is ——— times the number 10.

h. 7 7 7 7 7 7 7 7 7

is times the number 7.

5. Complete.

a. 28 is _____ times the number 7

[El-Monofia - Sadat City 23]

b. 35 is _____ times the number 5

c. 12 is 6 times the number —

d. Multiplicative equation of 8 + 8 + 8 + 8 + 8 = 40 is

[Ismaillia 23]

e. Multiplicative equation of 5 + 5 + 5 + 5 + 5 = 25 is

f. Multiplicative equation of 9 + 9 + 9 + 9 + 9 + 9 = 54 is

6. Write a multiplication equation or comparison statement as the example.

	Comparison Statement	Multiplication Equation
Ex.	10 is 5 times the number 2	10 = 5 × 2
a.	24 is 6 times the number 4	
b.	35 is 7 times the number 5	
c.	15 is 3 times the number 5	
d.	20 is 4 times the number 5	
e.		60 = 10 × 6
f.		16 = 8 × 2
g.		6 = 2 × 3
h.		5 = 5 × 1

Challenge

7. Hanan has 40 photos. She has 5 times as many photos as Hany.

How many photos does Hany have?

Hany Hanan ? 40



Multiple Choice Questions

Choose the correct answer.

1.	45 is ——	times the number 5.	2. The number —	equals 6 times 4.
		(Giza 23) (Sharkia 22)		(Giza 23)
	A . 9	B . 6	A . 10	B. 2
	C. 5	D. 40	C. 24	D. 12
3.	The numbe	r 40 equals 5 times the	4. The number 42 is	6 times the number—
	number —	[Souhag 23]		[Giza 23]
	A. 4	B. 8	A. 7	B . 9
	C. 15	D. 25	C . 8	D. 5
5.	10 times the	e number 430 is	6. The number 15 e	quals 3 times the
Ť	(Cair	ro - Heliopolis 23] [El-Kalyoubia 22]	number ———	[El-Menia 23]
	A. 430	B. 4,300	A. 4	B. 5
	C. 43,00	D. 430,000	C. 6	D. 7
7.	18 is equal t	o 6 times the number ———	8. The multiplication	on equation of
		(Aswan 23)	5+5+5+5=20) is
	A. 2	B. 3	A. 2 × 10 = 20	B. $4 \times 5 = 20$

9. The multiplication equation of 10 + 10 + 10 = 30 is —

D. 9

A.
$$5 \times 6 = 30$$

C. 6

B.
$$3 \times 10 = 30$$

C.
$$10 + 20 = 30$$

C. $20 \times 1 = 20$

D.
$$1 \times 30 = 30$$

D. 10 + 10 = 20

10. The multiplication equation of the comparison statement "20 is 10 times the number 2"

A.
$$20 = 10 \times 2$$

B.
$$20 = 10 + 10$$
 C. $20 = 4 \times 5$

C.
$$20 = 4 \times 5$$

D.
$$20 = 1 \times 20$$

- Creating Multiplicative Comparison Equations
- Solving Multiplicative Comparison Equations

Learn

During Emad's visit to the Zoo, he read this information.

Can you help him to calculate the tall of the giraffe?

Read and Understand

What do you know?

The giraffe in the zoo is 3 times as tall as the kangaroo. The kangaroo is 2 m tall. How tall is the giraffe?

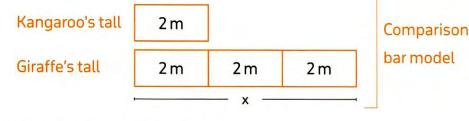
- The kangaroo is 2 m tall.
- The giraffe is 3 time as tall as the kangaroo Find how tall is the giraffe.



What strategy will you use?

Strategy: Write a multiplicative comparison equation

- 1. Use a letter to represent the unknown. Let the tall of the giraffe be x.
- 2. The giraffe is 3 times as tall as the kangaroo means, x is 3 times 2



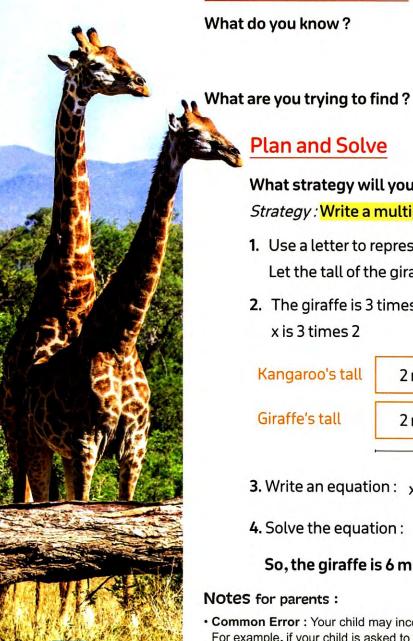
3. Write an equation: $x = 3 \times 2$

4. Solve the equation: x = 6

So, the giraffe is 6 m tall.

Notes for parents:

• Common Error: Your child may incorrectly place the unknown in an equation. For example, if your child is asked to write 12 is 3 times the number a , he/she may write $12 \times 3 = a$, instead of $12 = 3 \times a$ or $3 \times a = 12$



Example 1

Write an equation based on the comparison statement.

Use a letter to represent the unknown.

- a. 3 times the number 5 is
- b. 12 is 6 times as many as

Solution [

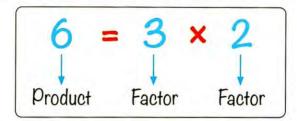


a.
$$3 \times 5 = a$$

b.
$$12 = 6 \times m$$

How to solve multiplication comparison equation?

You know that

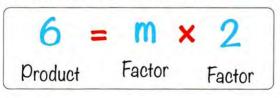


- Solving an equation means to find the value of the unknown that makes the equation true.
- 1. If the unknown is the product, use multiplication.

$$m = 3 \times 2$$
Product Factor Factor

Multiply: m = 6

2. If the unknown is one of the two factors, use division.



Divide: $m = 6 \div 2 = 3$

Example 2

Write an equation for each of the following comparisons and then solve it.

- a. What number is 3 times the number 7?
- b. 24 is 4 times a number. What is this number?
- c. 12 is 3 times a number. What is this number?

[•] It is important to note that the unknown can be in different positions in the equation. Explain that to solve an equation, you find what the unknown number is.

Solution [V]



a. Equation: $3 \times 7 = m$

Answer: m = 21

The number is 21

b. Equation: $24 = 4 \times h$

Answer: $h = 24 \div 4 = 6$

The number is 6

c. Equation: $12 = 3 \times a$

Answer: $a = 12 \div 3 = 4$

The number is 4

Example 3

Write an equation for the following comparison and then solve.

Wael ate 5 figs in the evening. His older brother ate 4 times as Wael ate.

How many figs did his brother eat?

Solution Y



Let the number of figs of his brother be a.

• Equation : $a = 4 \times 5$

• Answer: a = 20

His brother ate 20 figs.



Example 4

There were thirty-five adults in line at a movie theater. That is seven times the number of children in another line. How many children were in this line?

Solution [V]



Let the number of children be n. Then, 35 equals 7 times n

- Equation: $35 = 7 \times n$
- Use division to solve: $n = 35 \div 7 = 5$

So, the number of children in the line is 5 children.



check your understanding

1. Solve each of the following equations.

a.
$$x = 3 \times 6$$

b.
$$14 = 7 \times n$$

c.
$$6 \times y = 24$$

2. Write an equation to represent the situation below, and then solve.

Farmer Wael has 20 sheep. He has twice the number of sheep as farmer Sameh. What is the number of sheep of farmer Sameh?

Notes for parents :

· Explain that the missing number in an equation is represented by a blank, but we can use letters to represent missing numbers.

Exercise on lessons 2&3

Creating Multiplicative Comparison Equations

- Solving Multiplicative Comparison Equations
- REMEMBER
- UNDERSTAND APPLY
- PROBLEM SOLVING
- From the school book
- 1. Write an equation based on the comparison statement. Use a letter to represent the unknown number. You do not have to solve the equations.
 - a. 7 times the number 2 is
 - **b.** 2 times the number 7 is _____
 - c. 18 is 6 times as many as ____
 - d. 4 times the number 3 is
 - e. 124 is 4 times as many as
 - f. 25 is 5 times as many as _____
 - g. 30 is 5 times as many as _____
 - h. 7 times as many as 4 is _____
 - i. 6 times the number ______ is 48.
 - i. 27 is _____ times the number 9.
 - k. 6 is ______ times the number 2.
 - l. 8 times the number ______ is 24.
 - m. 5 times the number ______ is 15.



Solve each of the following.

a. $y = 5 \times 10$

b. $a \times 3 = 15$

c. $7 \times b = 21$

d. $3 \times 4 = x$

e. $5 \times b = 50$

f. $m \times 4 = 16$

g. $z=5\times1$

h. $n \times 2 = 18$

i. $5 \times k = 35$

- 3. Write an equation for the comparisons. Use a letter to represent the unknown number. You do not have to solve the equations.
 - a. Nadia collected 5 marbles in March. By May she had 4 times as many marbles. How many marbles does Nadia have in May?



b. III Hamed had 12 cookies, which was 3 times as many cookies as his brother Ahmed. How many cookies did Ahmed have?



c. II took Aida 21 minutes to walk to school on Monday. On Tuesday, it took her 7 minutes to ride her bike to school. How many times as many was riding her bike as walking?



d. Menna ran around the soccer field 4 times. Aya ran around the field twice as many times as Menna. How many times did Aya run around the field?



e. Rana has 6 mangoes. Her brother Sherif has 18. How many times of mangoes does Sherif have?



f. A restaurant sold eight times as many salads as they sold steaks. If they sold four steaks, how many salads did they sell?



g. A pet store sold two cats. They sold six times as many dogs as they sold cats. How many dogs did they sell?



- 4. Write an equation for each of the following comparisons, and then solve it.
 - a. What number is 5 times the number 6?
 - **b.** 36 is 4 times a number. What is this number?
 - c. Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat?
 [Giza - 6th October 22]



d. Mona sent twenty-five text messages a day. Esslam sent five a day. How many times as many texts did Mona send than Esslam sent?



e. It takes Wael six oranges to make a small glass of orange juice.
He uses eight times as many for a large glass. How many oranges does he use for a large glass?



f. Nora had four times as many Pounds as her sister. Her sister has three Pounds. How much money does Nora have?









How Many Seats? Use the information in the table to compare numbers of seats in different modes of transportation. Then, enter and solve an equation for each comparison.

Means of Transportation	Number of Seats
Bike	1
Motorcycle	2
Car	4
Truck	6
Bus	36
Metro Train	48

a. How many times as many seats are	e in a truck than on a motorbike ?
Equation :	Answer:
b. How many times as many seats ar	e on a bus than in a truck?
Equation:	Answer:
c. How many times as many seats are	e on the metro train than in a car?
Equation :	Answer:
d. A metro train can fit how many tim	es as many people as a truck?
Equation :	Answer:
e. A bus has how many times as man	y seats as a car?
Equation:	Answer:

Challenge

6. Bassem sold 9 chocolate bars. Marwan sold three times as many as Bassem. Esslam sold
9 fewer than Marwan. How many bars did Esslam sell?

Choose the correct answer.

1. The equation based on the comparison statement «3 times the number 7»

is ____

A. $3 \times 7 = A$

B. 7 - 3 = A

C. 3+7=A

D. $7 \div 3 = A$

2. The equation based on the comparison statement «45 is a times the number 9» is

A. 45 = 9 - a

B. $45 = a \times 9$

C. 45 = a + 9

D. 45 = 9 - a

3. What number is 10 times the number 13?

4. There are 4 bicycles on a road, and 14 times as many cars as bicycles. How many cars are on the road?

(Suez 22)

A. 130

B. 3

C. 23

D. 1,300

A. 46

B. 14

C. 56

D. 18

5. There were 24 adults and 3 children in line at a movie theater. How many times the adults were in the line as the children?

A. 28

B. 36

C. 7

D. 8

6. Noha sent 18 text messages a day. Ali sent 3 a day. How many times as many texts did Noha send as Ali?

A. 5

B. 4

C. 3

D. 6

- 7. Hanan has L.E. 5, and Mohamed has L.E. 50, then the money with Mohamed =
- times the money with Hanan.

[Cairo - El-Salam 23]

A. 3

B. 10

C. 300

D. 3,000

8. Ola had 4 times as many pounds as her sister. Her sister has 3 pounds. How much money does Ola have?

A. 10

B. 11

C. 12

D. 13

9. Hala was playing basketball. She made seven times as many shots as she missed. If she made 28 shots, how many shots did she miss?

A. 1

B. 2

C. 3

D. 4

10. Hany is twice as old as his brother. His brother is 8 years old. Which equation can be used to find Hany's age?

A. 2 + a = 8

B. $2 \times a = 8$

C. $2 \times 8 = a$

D. 8+2=a

Concept

Properties and Patterns of Multiplication





The fastest man in the world is Usain Bolt. He can run about 44 kilometers per hour for short distances. One of the fastest cars in the world in 2017 was driven to an average speed 10 times faster than Usain Bolt.

How fast can this car move?

Lesson No.	Lesson Name	Learning Objectives
Lessons 4&5	Commutative Property of Multiplication	 Students will explain the Commutative Property of Multiplication. Students will apply the Commutative Property of Multiplication to solve problems.
	Identity Property and the Zero Property	 Students will apply the Identity Property of Multiplication to solve problems. Students will apply the Zero Property of Multiplication to solve problems. Students will identify patterns that occur when multiplying by 10,100, and 1,000.
Lessons 6&7	Associative Property of Multiplication	 Students will explain the Associative Property of Multiplication. Students will apply the Associative Property of Multiplication to solve problems.
	Applying Patterns in Multiplication	 Students will apply decomposing and the Associative Property of Multiplication to solve equations with multiples of 10,100, or 1,000.

Lessons

4&5

- Commutative Property of Multiplication
- Identity Property and the Zero Property



Learn 1 Multiplication properties

Multiplication properties are rules for multiplication that are always true. In this lesson, you will learn three properties of multiplication.

- Commutative Property.
- Identity Property.
- Zero Property.



Natalie knit 3 scarves. She used 2 balls of yarn for each scarf.

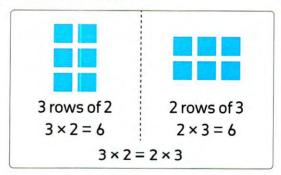
How many balls of yarn did she use in all?

You can use multiplication properties to help you find products.



Multiply 3 × 2

Commutative Property states that when you multiply two factors in any order the product is the same.



So, Natalie used 6 balls of yarn.

Identity Property of Multiplication

The Identity Property states that the product of 1 and any number equals that number.

For Example:

$$\cdot 3 \times 1 = 3$$

$$\cdot 1 \times 27 = 27$$

$$•548 \times 1 = 548$$

3 Zero Property of Multiplication

The Zero Property states that the product of zero and any number equals 0.

For Example:

$$•4 \times 0 = 0$$

$$\cdot 0 \times 13 = 0$$

•
$$217 \times 0 = 0$$

Notes for parents:

Using multiplication properties makes finding products easier.

Example 1

Complete each of the following.

Solution [V]

a. 8

e. 15

- b. 7
- f. 0

- c. 9
- **g**. 0

- d. 2
- h. 1

Example 2

Mr. Hany has 12 pens.

Write an equation using the Commutative Property of Multiplication to describe two ways he can arrange his pens.

Solution [V]



$$\cdot 3 \times 4 = 4 \times 3 = 12$$

$$\bullet 2 \times 6 = 6 \times 2 = 12$$



Check your understanding

Find the missing number. Name the property you used.

b.
$$9 \times || = 0$$

c.
$$5 \times 6 = \times 5$$

d. $\times 500 = 0$





Notes for parents:

- You may wish to ask your child questions such as the following as you observe your child at work:
- When you multiply by 1, which number is the product?
- When you multiply any number by 0, which number is the product?

Learn 2 Multiplying by 10, 100 and 1,000

You can use a basic fact and a pattern to find the product.

TH	Н	Т	0
			4
		4	0
	4	0	0
4 ,	0	0	0

$$4 \times 1 = 4$$

[Think: Use the basic fact $4 \times 1 = 4$]

$$4 \times 10 = 40$$

 $4 \times 10 = 40$ [Put 1 zero at the end]

$$4 \times 100 = 400$$

 $4 \times 100 = 400$ [Put 2 zeroes at the end]

$$4 \times 1,000 = 4,000$$

 $4 \times 1,000 = 4,000$ [Put 3 zeroes at the end]

Notice the pattern of zeroes.

Example 3

Fill in the blanks below.

Solution [V]



d. 210

g. 10

check your understanding

Complete each of the following.

Exercise on lessons 4&5

Commutative Property of Multiplication

- Identity Property and the Zero Property
- REMEMBER
- UNDERSTAND
- O APPLY
- PROBLEM SOLVING
- From the school book

1. Apply the Commutative Property of Multiplication to complete each equation.

d.
$$25 \times 52 = 52 \times$$
 [Matrouh 22]

f.
$$48 \times 12 = 12 \times$$
 [Souhag 22]

2. Apply the Commutative Property of Multiplication to find the unknown value.

b.
$$b \times 9 = 9 \times 8$$

d.
$$5 \times 9 = 9 \times b$$

f.
$$5 \times 93 = b \times 5$$

h.
$$3 \times m = 100 \times 3$$

Solve each of the following.

g.
$$0 \times 230$$

i.
$$0 \times 43$$

Complete each of the following.

i. 123 × 100 =

h.
$$\times$$
 245 = 24,500

Story Problems

- 5. There are 42 people who want to play football. Badr says that you can make 6 teams with 7 people on each team. Salma says you can make 7 teams with 6 people on each team. Who is correct? Use numbers, words, and pictures to explain your thinking.
- 6. Mr. Saleh has 24 beans. Write an equation using the commutative property of multiplication to describe two ways he can arrange his beans.
- 7. Bassem has 20 apples. Write an equation using the commutative property of multiplication to describe two ways he can arrange the apples.



8. Ahmed has 48 toy cars and wants to display them in his room.

He wants to arrange them in equal rows and equal columns.

How can he display his cars? Draw your solution.



9. Writing About Math Tarek says that 9 × 1,000 equals 900. What would you tell Tarek to help correct his mathematical thinking? Use words, numbers, or pictures to explain your thinking.

Challenge

- 10. Find the value of a and b.
 - **a**. 52×a=a×73
 - **b.** $112 \times a = 19 \times b$

Multiple Choice Questions

Choose the correct answer.

- A. 300
- **B.** 400
- **C.** 500
- D. 600

- 2. $28 \times 15 = 15 \times 28$ represents
- Property.

(Souhag 23)

- A. Associative
- **B.** Commutative
- C. Identity Multiplicative
- D. Distributive

A. 1

B. 34

C. 0

D. 43

- 4. 1 × 15 =
 - A. 1

B. 15

C. 0

D. 16

[Cairo - El Shrouk 23]

A. 1 **C**. 3

- B. 2
- D. 4

- 6. If $850 \times m = 850$, then m =
 - A. 1

B. 850

C. 2

D. 0

[Alex. 23]

A. 1

- **B.** 10
- C. 100
- **D**. 1,000

8. 100,000 is

- 10,000
- A. 10
- **B.** 100
- C. 1,000
- **D**. 10,000

times the number

9. 51 × 100 =

- A. 5,100
- **B.** 510
- C. 51,000
- **D.** 0

10. If $a \times 4 = 4 \times 2$, then a =

- A. 8
- B. 4

C. 2

- D. 6
- (Giza 23)

(Ismaillia 23)

(Ismaillia 23)

11. Which equation would be best to include in an explanation of the Commutative Property of Multiplication? [Alexandria - Borg El-Arab 22]

- A. $3 \times 1 = 3$
- C. $6 \times [2 \times 4] = [6 \times 2] \times 4$

B.
$$9 \times 6 = 6 \times 9$$

D.
$$5 \times 16 = [5 \times 11] + [5 \times 5]$$

A. $0 \times 6 = 0$

B. $1 \times 6 = 6$

C. $1 \times 6 = 6 \times 1$

D. $2 \times 6 = 6 \times 2$

Lessons

6&7



Applying Patterns in Multiplication



Learn 1 Associative property of multiplication

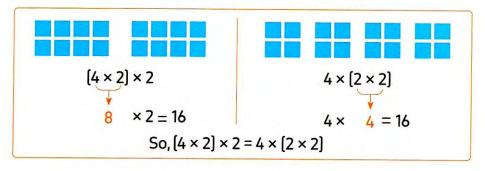
Suppose you make Super Cheesy Sandwiches for 4 people. Each person gets 2 sandwiches. Each sandwich has 2 slices of cheese. How many slices of cheese will you need? Here are some ways to find the product of $4 \times 2 \times 2$.



Associative Property of Multiplication

Associative Property states that when you group factors in different ways, the product is the same.

Use parentheses to group the factors you multiply first.



Example 1

Use the grouping or Associative Property of Multiplication and complete.

$$a. [6 \times 2] \times 5 = 6 \times [\times 5]$$

c.
$$7 \times [5 \times 2] = [7 \times 1] \times 2$$

b.
$$[20 \times] \times 10 = 20 \times [15 \times 10]$$

d.
$$315 \times [16 \times 120] = [\times \times \times \times 120] \times 120$$

Solution [V]

a.
$$[6 \times 2] \times 5 = 6 \times [2 \times 5]$$

c.
$$7 \times (5 \times 2) = (7 \times 5) \times 2$$

b.
$$(20 \times 15) \times 10 = 20 \times (15 \times 10)$$

d.
$$315 \times [16 \times 120] = [315 \times 16] \times 120$$

Notes for parents:

· Your child may forget to multiply by the third factor.

To check, ask your child to group the factors in a different way and multiply again.

Example 2

Solve each problem. Multiply the part in the parentheses first.

a.
$$[3 \times 2] \times 9$$

b.
$$10 \times [5 \times 3]$$

Solution [V]

a.
$$[3 \times 2] \times 9 = 6 \times 9 = 54$$

b.
$$10 \times (5 \times 3) = 10 \times 15 = 150$$

Example 3

Place parentheses to show one way to find the product.

Then show another way to use parentheses to find the product.

a.
$$3 \times 2 \times 5$$

Hint

If there are no parentheses, you can choose which pair of numbers to multiply first.

Solution [V]



a.
$$3 \times 2 \times 5 = [3 \times 2] \times 5$$

= $6 \times 5 = 30$

Or
$$3 \times 2 \times 5 = 3 \times (2 \times 5)$$

= $3 \times 10 = 30$

b.
$$4 \times 10 \times 2 = [4 \times 10] \times 2$$

= $40 \times 2 = 80$

Or
$$4 \times 10 \times 2 = 4 \times [10 \times 2]$$

$$= 4 \times 20 = 80$$

Example 4

Apply the Commutative and the Associative Properties of Multiplication to solve the problems.

It is helpful to use **Commutative Property** to multiply the small factors first.

Solution [V]



a.
$$3 \times 7 \times 2 = 3 \times 2 \times 7$$
 [Commutative Property]
= $(3 \times 2) \times 7$ [Associative Property]
= $6 \times 7 = 42$

b.
$$4 \times 8 \times 2 = 8 \times 4 \times 2$$
 [Commutative Property]
= $8 \times [4 \times 2]$ [Associative Property]
= $8 \times 8 = 64$

Check your understanding

Find each product.

a.
$$[4 \times 2] \times 6 =$$

Notes for parents:

· After your child has reviewed the Commutative Property of Multiplication, ask him/her to predict whether it would make a difference which two factors they multiplied first in $8 \times 4 \times 2$.

Learn 2 Decomposing and Associative Property of Multiplication

- You have learned before how to multiply by multiples of 10,100 and 1,000 using a basic fact and a pattern of zeroes.
- Here you will use decomposing and Associative Property to solve problems.

Example 5

Find the product: 8×30

Solution [V

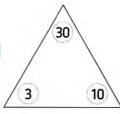
 $8 \times 30 = 8 \times [3 \times 10]$

$$3 \times 10 = [8 \times 3] \times 10$$

= 24 × 10

= 240

[Decompose 30 to 3 × 10] [Associative Property]

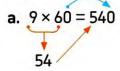


8 × 30 = 240

Example 6

Solve using a strategy you prefer.

Solution 🕎



c.
$$4,000 \times 6$$

= $[1,000 \times 4] \times 6$
= $1,000 \times [4 \times 6]$
= $1,000 \times 24$
= $24,000$

Check

check your understanding

Use decomposing and Associative Property to find each product.

a.
$$4 \times 40 =$$

b.
$$5 \times 500 = -$$

c.
$$2 \times 8,000 = -$$

- The product has the same number of zeroes as the number of zeroes in the factor with zeroes unless the basic fact has a zero.
- · Let your child solve using strategy he/she prefers.

on lessons 6&7

From the school book

1. Write the missing number.

a.
$$[8 \times 4] \times 2 = 8 \times [\times 2]$$

c.
$$2 \times (6 \times 5) = (2 \times 6) \times$$

e.
$$5 \times 14 \times 2 = [5 \times] \times 14$$

b.
$$5 \times [10 \times 2] = [5 \times] \times 2$$

d.
$$(3 \times 9) \times 5 = \times (9 \times 5)$$

f.
$$3 \times 6 \times 2 = 6 \times [\times 2]$$

2. Solve each problem. Multiply the part in the parentheses first. Show your work.

c.
$$2 \times [3 \times 4] =$$

q.
$$8 \times [6 \times 5] =$$

b.
$$[5 \times 2] \times 3 =$$

d.
$$5 \times [2 \times 3] =$$

3. Apply the properties of multiplication to solve the problems.

4. Place parentheses to show one way to find the product. Then show one other way to use parentheses to find the product.

5. Write how many to make up each number as the example.

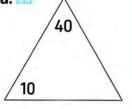
- ► Example: 40 = 4 Tens
- a. 30 = ____ Tens
- c. 160 = ____ Tens
- e. 🛄 120 = _____ Tens
- g. 600 = Hundreds
- i. 2,000 = ____ Thousands

- **b.** 1 80 = Tens
- d. 140 = ____ Tens
- f. 110 = _____Tens
- **h.** 5,000 = ____ Thousands
- j. 90 = ____ Tens

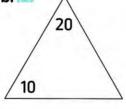
[Alex. - El Montazah 23]

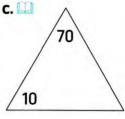
6. Write the missing factor in the box.

a. 🛄

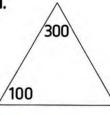


b. 🛄

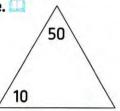




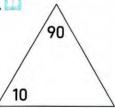
d.

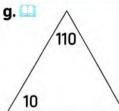


e. 🛄

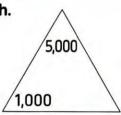


f. 💷





h.



7. Multiplying by multiples 10, 100 and 1,000 Use decomposing and the Associative Property of Multiplication to solve each problem.

- a. 1 7 × 20 = ---
- **b.** 4 5 × 50 = _____
- c. 4 × 700 = ____
- d. 3 × 4,000 = ____
- e. 9 × 500 = ____

8. Solve using a strategy you prefer.

- a. 200 × 3 = - [Cairo - El-Nozha 23]
- **b.** 500 × 7 = ----[El-Monofia - Sadat City 23]
- c. $600 \times 3 = -$ - [Cairo - El-Shrouk 23]
- d. $6 \times 90 = -$
- e. $7.000 \times 6 = -$

- f. $600 \times 4 =$
- **q.** $4.000 \times 5 =$
- 9. Aisha bought 3 packs of water bottles. Each pack had 3 rows of 4 water bottles. How many water bottles did Aisha buy?

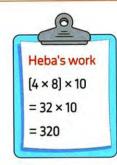


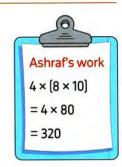
- 10. Hany works 20 hours a week. If he makes L.E. 6 per hour.
 - How much does Hany make in two weeks?
- 11. Angy runs 2 kilometers a day. If she runs five days a week. How many kilometers does she run in 10 weeks?



12. Review each student's work. Then, answer the questions.

How is Heba's and Ashraf's work the same? How are they different? Which student's strategy do you prefer? Why?





13. Writing about Math

Use what you have learned about the Associative Property of Multiplication to help Farouk solve the problem. Use words and numbers to explain your thinking.

Farouk is trying to solve the problem $2 \times 7 \times 4$

He starts by solving 2 × 7 and gets 14. Place parentheses to show how Farouk started this problem. 2 × 7 × 4

Next, he writes 14 × 4 but he does not know how to solve that multiplication problem. Can you show Farouk another way to solve the problem?

Challenge

14. Marwan's mom gives him L.E. 5 every day for lunch at school. If he only pays L.E. 3 for lunch, how much will he save in 10 weeks if he goes to school five days weekly?

Multiple Choice Questions

Choose the correct answer.

(Giza 23)

B. 80,000

A. 7

B. 700

D. 8

C. 70

D. 7,000

(Souhag 23)

A. 0

B. 1

C. 10

D. 5

4. Which of the following represents the Associative Property?

[El-Beheira 23]

A.
$$11 \times 129 = 129 \times 11$$

B.
$$2 \times [5 \times 3] = [2 \times 5] \times 3$$

C.
$$0 \times 17 = 0$$

D.
$$[2 \times L] + W$$

[Alexandria 23]

C. 142

D. 368

A. 234

B. 9

C. 24

D. 10

7. $(300 \times 7) \times 0 = -$

A. 2,100

B. 3,070

C. zero

D. 307

8. The missing factor in the box

equals

A. 7,000

C. 700

B. 70

D. 7 10



9. 5,000 × 2 = ____

A. 1,000

B. 2 Thousands

C. 10 Hundreds

D. 10 Thousands

10. Which equation would be best to include in an explanation of the Associative Property

of Multiplication?

[Alexandria - El-Montaza 22]

A.
$$[9 \times 12] \times 0 = 0$$

C.
$$[4 \times 6] \times 1 = 4 \times 6$$

B.
$$[3 \times 7] \times 2 = 3 \times [7 \times 2]$$

D.
$$[11 \times 8] \times 9 = 9 \times [11 \times 8]$$

Unit Five Assessment



1. Choose the correct answer.

- 1. 5 × 9 = 9 × _____
 - **A**. 5
- **B**. 9

C. 14

D. 4

- **2.** 375 × = 37,500
- **A.** 10
- **B.** 100

C. 1,000

D. 10,000

- 3. 0 × 25 =
 - A. 25
- B. 1

C. 0

- **D.** 250
- 4. Which equation would be the best to include in an explanation of the Commutative Property of Multiplication?
 - A. $3 \times 5 = 5 \times 3$

B. $4 \times 16 = [4 \times 11] + [4 \times 5]$

C. $[6 \times 4] \times 2 = 6 \times [4 \times 2]$

- **D.** $5 \times 1 = 5$
- **5.** Which equation would be the best to include in an explanation of the Associative Property of Multiplication?
 - **A.** $[9 \times 12] \times 0 = 0$

B. $[4 \times 6] \times 1 = 4 \times 6$

C. $[3 \times 7] \times 2 = 3 \times [7 \times 2]$

- **D.** $7 \times 6 = 6 \times 7$
- **6.** A box has 7 green balls. The box has yellow balls 5 times as many as green balls.
 - How many yellow balls are in the box?
 - A. 12
- **B.** 35

C. 2

- **D**. 75
- 7. The bar model 3 3 3 3 represents that the number is 5 times
 - number 3 [Giza Abo El-Nomros 23]
 - **A**. 8
- **B**. 15

C. 20

D. 30

2. Complete.

1. 4×3×7=4×

- [Cairo El-Kobba 22]
- 2. The multiplicative equation of 8 + 8 + 8 + 8 + 8 = 40 is
- 3. The Multiplicative Identify Element is

[Alexandria - Montaza 22]

- 4. 3,200 = Hundreds
- **5.** $4 \times 7 = 7 \times 4$ Property of Multiplication.

[Port Said 22]

- 6. If A × 7 = 21, then A =
- 7. If $1,000 \times Z = 3,000$, then Z = -

[Cairo - El-Nozha 23]

8. 7 times as the number 5 =

[Cairo - El-Shrouk 23]

3. Choose the correct answer.

1. The number 15 equals 5 Times the number —

[Cairo - Rod El-Farag 23]

- A. 4
- **B.** 5

C. 3

D. 15

2. If X × 10 = 100 then X =

(Souhag 23)

- A. 10
- **B.** 5

C. 15

D. 20

3. 0 × 216 = _____

[Alex. 23]

- A. 216
- **B.** 2,160

C. 1

D. 0

4. 13 × 24 = 24 × 13 represents — Property.

(Giza 23)

A. Associative

B. Commutative

C. Multiplicative Identity

- D. Distribution
- 5. What is the number that is 10 times the number 18?

[El-Menia 23]

- A. 28
- **B.** 1,800

C. 180

D. 18

6. If a × 4 = 4 × 2, then a =

(Giza 23)

- A. 8
- B. 4

C. 2

D. 6

- 7. $2 \times [7 \times 4] = [2 \times -] \times 4$
 - A. 2
- **B**. 7

C. 4

D. 28

4. Answer the following.

1. Ayman ate 4 figs and his brother ate 3 times as him, how many figs did his brother eat?

His brother ate = _____

(Cairo - El-Shrouk 23)

- 3. Apply the properties of multiplication to solve the problems.
 - a. 3×2×4

b. 5×7×2

- 4. Find the unknown value.
 - a. $7 \times 5,000 = 7 \times 5 \times m$

b. $[3 \times 7] \times 6 = 3 \times [m \times 6]$

c. 9×4=4×m

d. $248 \times m = zero$

THEME TWO

Mathematical Operations and Algebraic Thinking

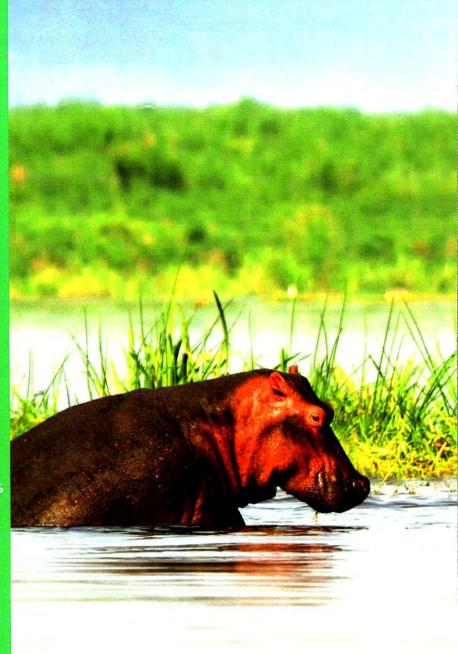
HINO

Factors and Multiples

- ► Concept 1 : Understanding Factors
- ► Concept 2 : Understanding Multiples

Fast Fact

Hippos are considered the second largest land animal on Earth (first place goes to the elephant!). Males measures 1 m and a half tall, and can weigh up 3,200 kg. That's as much as three small cars!



Concept

1

Understanding Factors



Lesson No.	Lesson Name	Learning Objectives
Lessons 1&2	Identifying Factors of Whole Numbers	 Students will define factors of a whole number. Students will find all factors of a given number between 0 and 100. Students will explain patterns they observe in numbers that have 2, 5 or 10 as factors.
	Prime and Composite Numbers	 Students will find all factors of a given number between 0 and 100. Students will explain patterns they observe in numbers that have 3, 6 or 9 as factors. Students will determine if a number is prime or composite.
Lesson 3	Greatest Common Factor (G.C.F)	 Students will find common factors between two whole numbers. Students will identify the greatest common factor between two whole numbers.

Lessons

1&2

- ▶ Identifying Factors of Whole Numbers
- Prime and Composite Numbers

12 x1=12 6X2 = 124x3=12 $1 \times 12 = 12$

204

Learn 1 Identify factors of whole numbers

A factor is a number multiplied by another number to get a product.

▶ Examples:

$$2 \times 9 = 18$$
 \downarrow

factor × factor = Product

Many numbers can be broken into factors in different ways.

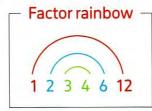
For Example:

$$12 = 1 \times 12 = 2 \times 6 = 3 \times 4$$

So, the factors of 12 are 1, 2, 3, 4, 6 and 12.

There are 6 factors or 3 factor pairs.

You can show the factors of 12 in many ways as:



Factor	T-chart
1	12
2	6
3	4

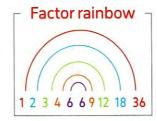
Example 1

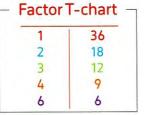
Find all factors of 36, and create a factor rainbow, and factor T-chart.



$$36 = 1 \times 36 = 2 \times 18 = 3 \times 12 = 4 \times 9 = 6 \times 6$$

So, the factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18 and 36.





Notes for parents:

- · Let your child find the factors of 15.
- Help your child show the factors by factor rainbow and factor T-chart.

How can you find all the factors of a number?

Helpfull Hint:

1	is a factor of any number. Every number will have a factor pair of 1 and	
2	is a factor, if the digit in the ones place is even (The ones digit is : 0,2,4,6 or 8).	8,24,48
3	is a factor, if the sum of the digits is a number that exists when skip counting by 3s.	9,18,24
4	is a factor, if the number is existing when skip counting by 4s.	8 ,12 ,16
5	is a factor, if the ones digit is 0 or 5.	5,15,20
6	is a factor, if the number is even and has a factor 3.	12,18,24
9	is a factor, if the sum of the digits is a number that exists when skip counting by 9s.	9,27,45
10	is a factor, if the ones digit is 0.	20,50,100

Example 2

Answer the following questions.

- a. Is 3 a factor of 29? Explain how do you know.
- b. Is 9 a factor of 54? Explain how do you know.
- c. Is 6 a factor of 48? Explain how do you know.

Solution [V]



- a. No, because 2 + 9 = 11 and 11 is a number does not exist when skip counting by 3s.
- **b.** Yes, because 5 + 4 = 9 and 9 is a number existing when skip counting by 9s.
- c. Yes, because 48 is even and 4 + 8 = 12 and 12 is a number existing when skip counting by 3s.

Ask your child more questions of factors such as: Is 2 a factor of 14? Is 5 a factor of 61? and more questions, then let your child explain how did he/she know.

Example 3

Find all the factors of 48.

Solution [V]



To find all the factors of a number, make an organized list of multiplication sentences. Write sentences until your factors start to repeat. (Ignore any sentences that won't work). Then list the factors. Find all the factors of 48.

48 = 1 × 48 [1 is a factor of every whole number]

2 × 24 [48 is even]

 3×16 [4+8=12 and 12 is existing when skip counting by 3s.]

4 × 12 [48 is existing when skip counting by 4s.]

-5×

6×8 [48 is even, and 3 is a factor]

7×

8 × 6 [← STOP! Repeat of 6 × 8].

The factors of 48 are 1, 2, 3, 4, 6, 8, 12, 16, 24 and 48. There are 5 factor pairs.



check your understanding

1. Find the factors of 15 and create a factor rainbow and factor T-chart.

Choose the correct answer.

- a. 5 is a factor of
 - A. 50

B. 51

C. 52

D. 53

- b. Which number is a factor of 20?
 - A. 6

B. 10

C. 30

D. 40

- c. The number 11 has factors.
 - A. 2

B. 3

C. 4

D. 5

- d. The number 32 has factors.
 - A. 4

B. 6

C. 8

D. 10

- e. Which is the factor of every number?
 - A. 0

B. 1

C. 2

D. 10

Notes for parents:

Ask your child to find all the factors of 72 by using the helpful hint to check all the factors.

Learn 2 Prime and composite numbers

You can use the factors of a number to tell if it is a prime number or a composite number.

A Prime number is a whole number that has exactly two different factors, 1 and itself.

Example:

5 is an example of a prime number. It has only two different factors, 1 and 5.

More examples of prime numbers

Number	Factors
17	1,17
29	1,29
31	1,31

A Composite number is a whole number that has more than two factors.

▶ Example:

6 is an example of a composite number. Its factors are 1, 2, 3 and 6.

$$6 = 2 \times 3$$

▶ More examples of composite numbers

Number	Factors
15	1,3,5,15
18	1,2,3,6,9,18
25	1,5,25

Remarks

- The number 1 is neither prime nor composite because it has only ONE factor.
- 2 is the smallest prime number.
- All prime numbers are odd numbers except 2.
- The following table shows the prime numbers which lie between 1 and 100:

2	3	5	7	11	13	17	19	23
29	31 37	41	43	47	53	59	61	
	67	71	73	79	83	89	97	

Use the 100-chart to check the prime and the composite numbers and let your child identify how he/she knew the difference between them.

Example 4

Check each of the following numbers if it is a prime or a composite number.

a. 9

b. 13

c. 19

Solution [7]

a. 9=1×9

$$=3\times3$$

9 has more than two factors [1,3,9].

So, 9 is a composite number.

b. $13 = 1 \times 13$

13 has exactly two different factors [1,13].

So, 13 is a prime number.

c. $19 = 1 \times 19$

19 has exactly two different factors [1,19].

So, 19 is a prime number.



Check your understanding

Choose the correct answer.

- a. _____ is a prime number.
 - B. 16
- 4
- D. 21

- b. _____ is a prime number.
 - A. 1

A. 9

B. 6

C. 7

C. 19

D. 12

- c. isn't a prime number.
 - A. 1

B. 3

C. 5

D. 7

- d. _____ is a composite number.
 - **A**. 1

B. 3

C. 13

D. 15

- e. _____ isn't a composite number.
 - A. 11

B. 12

C. 14

D. 20

- f. The smallest prime number is
 - A. 0

B. 1

C. 2

D. 3

- g. The smallest odd prime number is
 - A. 0

B. 1

C. 2

D. 3

- h. The prime number between 44 and 50 is
 - A. 45

B. 46

C. 47

D. 49

Notes for parents:

• Give your child a group of numbers and ask him/her to identify the prime numbers and the composite numbers.

Exercise on lessons 1&2

- ▶ Identifying Factors of Whole Numbers
- ▶ Prime and Composite Numbers

-	-				
_	u	м	м	м	L
	п	v	v	D	г

_	UN	u	_		A I T	v

O APPLY

PROBLEM SOLVING

From the school book

First: Exercises on factors

1. Determine if the given number has 2 as a factor, 5 as a factor, or 10 as a factor. Circle yes or no.

	Number	Is 2 a factor?		ls5af	actor?	Is 10 a factor?	
a.	26	Yes	No	Yes	No	Yes	No
b.	70	Yes	No	Yes	No	Yes	No
c.	15	Yes	No	Yes	No	Yes	No
d.	17	Yes	No	Yes	No	Yes	No

2.	Highlight o	r circle	the	factors	of	the	numbers	listed.
----	-------------	----------	-----	---------	----	-----	---------	---------

- a. 15:
- 5
 - 10
- 5 10
- c. 12: e. 16:
- - 2
- 3
 - 4
- 5
- 6

b. 30: 2

d. 25: 2

9

- 5
- 10

5

10

10

f. 20: 1 2 3 4 5 7 10

3. Complete with "is a factor of" or "is not a factor of" :

2

2

- **c.** 2 _______100
- e. 6————96
- g. 4———88
- i. 19 _______19

- _____52
- d. 3————36
- f. 1————67
- h. 9 ______27
- j. 8_____

4. Answer the following problems.

- a. Is 2 a factor of 23? How do you know?
- b. Is 5 a factor of 35? How do you know?
- c. Is 6 a factor of 84? How do you know?
- d. Is 3 a factor of 53? How do you know?

.es	SONS 1&2 • REMEMBER • UNDERSTAND • APPLY & P	ROBLEM SOLVING	
(e. Is 4 a factor of 32? How do you know?		
1	f. Is 7 a factor of 48? How do you know?		
ġ	g. Is 9 a factor of 63? How do you know?		
	III Find all the factors of the following and c	reate a factor rainbow a	nd a factor T-chart.
ć	a. 20. There are 3 factor pairs. Factors are:	-Factor rainbow-	— Factor T-chart –
	b. 40. There are 4 factor pairs. Factors are:	Factor rainbow	-Factor T-chart
	c. 36. There are 5 factor pairs. Factors are :	Factor rainbow	– Factor T-chart –
	List all the factors of each number. You may		
	a. 6 [Alex. 23]	b. 16 ————	
	- 38	d 25	

- e. 54
- **g**. 48
- i. 13 -
- k. 49

- f. 21
- **h.** 19
- **j**. 35
- l. 64

				UNIT 6 CONCEPT 1				
7. F	actor Riddles. Gue	ss the number.						
• a		The number is an even number between 1 and 10. Some of its fa What number is it?						
t		The number is an even number between 20 and 30. Some of its factors include 1, 2, 4, 7 and 14. What number is it?						
c	:. 👊 The number i	actor. It is less than 60						
c	f. The number is a digit. One of its f	it is less than its ones						
e	ones digit. Or	digit is less than its						
Sec								
8. 0	Complete with "Prin	ne" or "Composite".						
а	. 2 is ———	b. 4 is	c. 29 is	d. 3 is				
e	. 5 is———	f. 6 is	g. 7 is ———	h. 11 is				
j.	. 13 is ———	j. 12 is —	k. 16 is	l. 23 is———				
		<u> </u>	*					

nplete.			
The smallest prime numbe	ris ———		(Giza 23)
The prime number has —	factors.		(Souhag 23)
The prime number has two	different factors which are	and	
The only even prime numb	er is ———	(Giza – Ab	oo El-Nomros 23)
The prime numbers betwee	en 60 and 70 are ————		
The number 37 has	factors and it is a	number.	
The number 15 is a	number because it has —	factors.	
	The prime number has The prime number has two The only even prime number	The smallest prime number is The prime number has factors. The prime number has two different factors which are The only even prime number is The prime numbers between 60 and 70 are The number 37 has factors and it is a	The smallest prime number is The prime number has factors. The prime number has two different factors which are and The only even prime number is (Giza - Above prime numbers between 60 and 70 are The number 37 has factors and it is a number.

12 | 13

10. List all the factors of each number. Then, write if the number is prime or composite.

- e. 🛄 18 _____
- g. 🕮 21
- i. 50
- k. 🚇 31 _____

- b. 24 [Alex. West 22]
- d. 37
- f. 32
- h. 12 ______(Cairo El-Salam 23)
- i. 22
- l. 🕮 44

88 89

11. Prime Numbers less than 100. Identify all of the prime numbers less than 100. Use skip counting and factor patterns to help you eliminate composite numbers.

- 1. Circle 2 and cross out all other numbers that you say when you skip count by 2s.
- 2. Circle 3 and cross out all other numbers that you say when you skip count by 3s.
- 3. Circle 5 and cross out all other numbers that you say when you skip count by 5s [some are already crossed out].
- 4. Circle 7 and cross out all other numbers that you say when you skip count by 7s.

and	tho	cros	has	out	num	hers	
unu	ti ic v	C. 03	Jeu	out	· · · · · ·	i DCI -	
	una	and the	and the cros	and the crossed	and the crossed out	and the crossed outriding	e and the crossed out numbers

12. What's the Error? Ashraf listed the first five prime numbers as 2, 3, 7, 11 and 13. Describe his error. Write the correct answer.

Challenge

13. Write all prime numbers which are between 46 and 62

14. Write all composite numbers which are between 5 and 23

Multiple Choice Questions

Choose the correct answer.

- 2. 1,2,4,8 are factors of the number— All the factors of 16 are (Souhag 22) (Giza 23) A. 15 B. 8 B. 2,4,8 A. 1,16 D. 1,2,4,6,8,16 C. 17 C. 1,2,4,8,16 D. 18 is a factor of 63. (Ismailia 22) 3 and 7 are factors of — A. 2 **B.** 5 [El-Monofia- Quesna 23] C. 7 C. 18 D. 42 D. 11 **B**. 35 A. 36 6. The factor pair 3 and 8 is for 5. The number 15 has the number -(Giza 23) C. 12 D. 24 A. 2 **B**. 3 C. 4 D. 5 A. 6 B. 11 8. The smallest odd prime number 7. 23 has factor pair. A. 1 **B**. 2 is -[Cairo 23] A. 0 C. 2 D. 3 **C.** 3 D. 4 B. 1 10. The prime number has —— 9. The composite number has factors only. [El-Kalyoubia 23] [El-Dakahlia 22] [Cairo 23] factors. B. more than 2 A. 1 D. 4 A. 0 B. 2 C. 1 C. 2 **D**. 0 12. The prime number just after 15 11. Which of the following is a factor [Alex. 23] is of 10? C. 18 D. 12 C. 15 D. 5 A. 16 **B.** 17 A. 30 **B.** 20 14. Which of the following is a prime 13. Which of the following is not a prime number? [Cairo - El-Marg 23] number? [El-Sharkia - Abo Kebeer 22] A. 7 **B.** 15 C. 19 **D.** 13 C. 14 A. 1 B. 11 **D.** 50
- 15. Which statement is true?
 - A. 1 is a factor of only odd numbers.
 - C. 1 is a factor of any number.

- B. 1 is a not a factor of any number.
- D. 1 is a factor of only 0.

Greatest Common Factor (G.C.F)

Learn

How can you find the greatest common factor for two numbers?

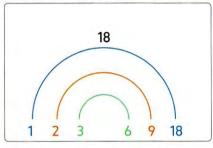
- Common factors of two numbers are factors that are the same.
- The greatest common factor [G.C.F] of two numbers is the greatest number that is a factor of both.

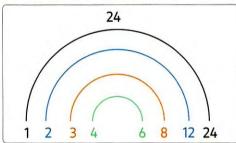
How can you find the greatest common factor (G.C.F) between two numbers or more?

- 1. Identify the factors of each number.
- 2. Find the common factors for these numbers.
- 3. Determine the greatest common factor [G.C.F].

For Example:

How can you find the greatest common factor for 18 and 24?





- Factors of 18: 1,2,3,6,9,18
- Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24
- Common factors: 1, 2, 3, 6
- The greatest common factor (G.C.F): 6

Example 1

Find all the common factors and G.C.F of each pair.

- a. 12 and 15
- b. 16 and 28
- c. 7 and 11

Solution [V]



a. 12:1,2,3,4,6,12 15: 1,3,5,15

Common factors: 1, 3

G.C.F: 3

Factor	s of 12	Factor	s of 15
1	12	1	15
2	6	3	5
3	4		

Notes for parents:

• Tell your child that common factors and greatest common factor are helpful to solve many problems in life.



Common factors: 1, 2, 4

G.C.F: 4

c.	7:	1	,	7
	11 :	1	,	11

Common factor: 1

G.C.F:1

Factors of 16		Factors of 2	
1	16	1	28
2	8	2	14
4	4	4	7

Note that:

- 1 is the common factor of all whole numbers.
- All prime numbers has one common factor that is 1. Such as 7 and 11.

Example 2

For a dinner party, Adam is creating individual servings. He has 28 pieces of fruit and 14 yogurt cups. If he wants each serving to be identical with no food left over, what is the greatest number of servings Adam can create? How many pieces of fruit and how many yogurt cups will be in each serving?

Solution [V]

Factors of 28:1,2,4,7,14,28

Factors of 14:1,2,7,14

Common factors: 1,2,7,14

G.C.F:14

The greatest number of individual servings is 14 of 2 pieces of fruit and one yogurt cup in each individual serving.

✓ Check	your understanding

Find all the common factors and G.C.F of each pair.

- a. 9 and 12
- **b.** 25 and 15

• Give your child two numbers and let him/her find the common factors and the GCF of them such as (5 and 17), (4 and 12).



UNDERSTAND

APPLY

REMEMBER

Greatest Common Factor (G.C.F)

PROBLEM SOLVING

From the school book

1.		mbers.
	a.	16 and 20
		Factors of 16:
		Factors of 20 :
	b.	18 and 4
		Factors of 18:
		Factors of 4:
	c.	20 and 30
		Factors of 20:
		Factors of 30:
	d.	□ 17 and 22
		Factors of 17:
		Factors of 22:
	e.	💷 21 and 35
		Factors of 21:
		Factors of 35:
	f.	(iii) 36 and 42
		Factors of 36:
		Factors of 42:
2.	Li	st the common factors of the given numbers.
	a.	4 and 12
	b.	10 and 35
	C.	17 and 34
214		18 and 24 ———————————————————————————————————
- 11		

	e. 25 and 30		
	f. 22 and 44		
3.	Find the common factors and the greatest	common factor (G.C.F) of :	
	a. 4 and 6		
	Factors of 4:		
	Factors of 6:		
	Common factors :		
	b. 10 and 30		
	Factors of 10 :		
	Factors of 30:		
	Common factors :	GCF:	
	c. 12 and 18		(Sharkia 22)
	Factors of 12:		
	Factors of 18:		
	Common factors :	GCF:	
	d. 6 and 12	(Giza - A	Abo El-Nomros 23)
	Factors of 6 are :		
	Factors of 12 are :		
	Common factors :		
	e. 10 and 15		(Souhag 23)
	Factors of 10 :		
	Factors of 15 :		
	Common factors :		
4.	Find the G.C.F of the given numbers.		*
O	a. 30 and 45		(Ismailia 22)

b.	12 and 18	(Giza 23) (Cairo 23)
c.	🛄 40 and 50	
d.	10 and 45	
e.	🛄 10 and 24	
f.	35 and 25	[Monofia - Sers El Layan 23] [Monofia - Shebin El-Koum 22]
g.	40 and 48	
h.	33 and 11	
i.	20 and 12	[Cairo 23]
j.	18 and 30	(Cairo - El-Marg 23)
k.	24 and 18	[Giza 23]
l.	12 and 15	[Giza 23]
Us	se what you know about fac	tors and common factors to solve each problem.
a.	number of groups that can b	erasers. She wants to put them in groups. What is the greatest be made so that each group has the same number of items? heach group? How many erasers will be in each group?
b.	must have the same numb	oys who want to participate in lap on teams. If each team per of girls and the same number of boys, what is the that can participate? How many girls will be in each team? each team?

c.	A class is going on a field trip. There are 36 girls and 27 boys in the class. Students will be divided into groups of girls and boys. What is the greatest number of groups that can be made so that each group has the same number of children? How many children will be in each group of boys? How many children will be in each group of girls?				
d.	Mohab is making flower arrangements. He has 7 roses and 14 daisies. If Mohab wants to make all the arrangements identical and have no flowers left over, what is the greatest number of flower arrangements that he can make? How many roses and how many daisies will be in each flower arrangement?				
e.	Eslam has 60 blue marbles and 24 red marbles. If he wants to place them in identical groups without any marbles left over, what is the greatest number of groups Eslam can make? How many blue marbles and how many red marbles will be in each group?				
f.	Amira and her friends are going on a picnic. Amira wants to make snack packs of apples and candy to take on the picnic. She has 24 apples and 36 small bags of candy. What is the greatest number of snack packs Amira can make if each pack must have exactly the same number of apples and exactly the same number of bags of candy with no snacks left over? How many apples will be in each snack pack? How many bags of candy will be in each snack pack?				
	nallenge nd the G.C.F of 15, 18 and 21.				

Multiple Choice Questions

Choose the correct answer.

1.	The common factor of all numbers		2. Which of the following are the common	
Ĭ	is [Kalyoubia 23] [Beheira 23]	factors of 4 and	16?	
	A . 3	B. 2	A. 1 and 2	B. 1 and 3
	C . 1	D. 0	C. 2 and 3	D. 3 and 4
3.	Which of the following are the common factors of 15 and 25 ?		4. Which number is the greatest common factor (G.C.F) of 12 and 6? (Cairo - Heliopolis 23)	
				(El-Beheira - Kafr El-Dawwar 22)
	A. 1 and 3	B. 1 and 5	A. 2	B. 3
	C. 1 and 15	D. 1 and 25	C. 6	D. 12
5.	Which number is the greatest common		6. Which number is the greatest common factor of 45 and 60? [Damietta 22]	
0	factor (G.C.F) of 5 and 11?			
	A . 2	B. 5	A . 5	B. 20
	C. 1	D. 11	C . 15	D. 30
7.	The greatest common factor (G.C.F) of the two numbers : 10 , 24		8. The G.C.F of 20 and 30 is —————	
	is ———	(Aswan 23)		
	A. 34	B. 22	A. 1	B. 4
	C. 2	D. 14	C . 5	D. 10
9.	. 1 and 7 are the common factors		10. Which two numbers are common factors	
	of ———		of 48 and 54?	
	A. 2 and 7	B . 2 and 14	A . 2	B . 6
	C. 7 and 12	D. 7 and 14	C . 8	D. 9
			E. 12	F. 24

- 11. Which pair of numbers has the same greatest common factor as 42 and 12?
 - A. 9 and 6
- B. 8 and 24
- C. 16 and 60
- **D.** 18 and 30



Lessons

4&5

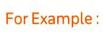
- ▶ Identifying Multiples of Whole Numbers
- Common Multiples

Learn 1 Multiples of whole numbers

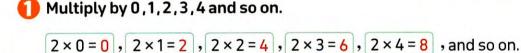
What is a multiple?

A multiple is the product of a given number and another whole number.

- You can find multiples of any number using any of these ways:
- 1 Multiplying by the whole numbers.
- 2 Skip-counting on the number line.
- 3 Skip-counting using 100 Chart.

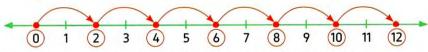


To find the multiples of 2, use any of these ways:



Then the products 0, 2, 4, 6, 8, ... are called the multiples of 2

Using skip-counting by 2s on the number line.

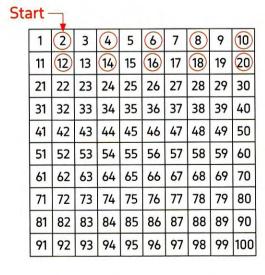


Then the multiples of 2 are 0, 2, 4, 6, 8, 10, 12 and so on.

Use skip-counting by 2s using 100 Chart.

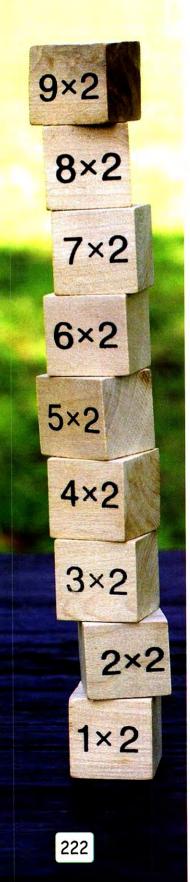
Then the multiples of 2 [except zero] are

2,4,6,8,10,12 and so on.



Notes for parents:

 Skip counting on the number chart helps your child notice the patterns to help him/her find the multiples more quickly.



Remarks

- Zero is a multiple for any number.
- The multiple of any number not equal to 0 is divisible by this number.

For Example:

 $2 \times 5 = 10$ 10 is a multiple of both 2 and 5

10 is divisible by 2

10 is divisible by 5



Example 1

Find the multiples of.

a. 4

b. 10

Solution [V]

a.
$$4 \times 0 = 0$$

$$4 \times 1 = 4$$

$$4 \times 2 = 8$$

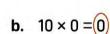
$$4 \times 3 = 12$$

and so on.

Then:

The multiples of 4 are:

0,4,8,12,... and so on.



$$10 \times 2 = 20$$

$$10 \times 3 = 30$$

and so on.



The multiples of 10 are:

0,10,20,30,... and so on.



Check your understanding

- a. List 4 multiples of 8.
- b. Circle the numbers that are multiples of 3.

• Explain that the number of multiples that a number has is endless.

Learn 2 Common Multiples

A common multiple is a multiple of two or more numbers.

Finding common multiples using number chart

Look at the column that starts with 2. All the numbers in this column are multiples of 2.

• List the multiples of 2 on the table.

Look at the column that starts with 3.

All the numbers in this column are multiples of 3.

• List the multiples of 3 on the table.

These numbers that are on both lists are common multiples of 2 and 3.

List the common multiples of 2 and 3.

×	0	1	2	3	4	5	6	7	8	9	10	11	12
0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	0	1	2	3	4	5	6	7	8	9	10	11	12
2	0	2	4	6	8	10	12	14	16	18	20	22	24
3	0	3	6	9	12	15	18	21	24	27	30	33	36
4	0	4	8	12	16	20	24	28	32	36	40	44	48
5	0	5	10	15	20	25	30	35	40	45	50	55	60
6	0	6	12	18	24	30	36	42	48	54	60	66	72
7	0	7	14	21	28	35	42	49	56	63	70	77	84
8	0	8	16	24	32	40	48	56	64	72	80	88	96
9	0	9	18	27	36	45	54	63	72	81	90	99	108
10	0	10	20	30	40	50	60	70	80	90	100	110	120
11	0	11	22	33	44	55	66	77	88	99	110	121	132
12	0	12	24	36	48	60	72	84	96	108	120	132	144

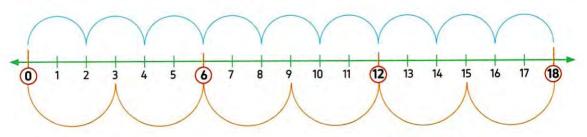
Finding common multiples using number line

You can use a number line to find common multiples.

Example:

Use a number line to find common multiples of 2 and 3





The common multiples of 2 and 3 are 0, 6, 12, 18,... and so on.

Remark

Zero is a common multiple for any number.

Notes for parents:

 Ask your child use a number chart to find multiples of a number, ask him/her to use it to find the common multiples of two numbers.

Example 2

Find the multiples of each of the numbers 4 and 6 up to 50, then find the common multiples between them.

Solution [7]

- The multiples of $\frac{4}{4}$ are : 0, $\frac{4}{5}$, $\frac{8}{12}$, $\frac{10}{5}$, $\frac{20}{5}$, $\frac{24}{5}$, $\frac{30}{5}$, $\frac{30}{5}$, $\frac{40}{5}$, $\frac{44}{5}$
- The multiples of $\frac{6}{6}$ are : 0, 6, $\frac{12}{12}$, 18, $\frac{24}{12}$, 30, $\frac{36}{12}$, 42, $\frac{48}{12}$
- The common multiples of 4 and 6 are: 0, 12, 24, 36, 48

Check your understanding

Find the multiples of each of 7 and 3 up to 50, then find the common multiples between them.

Solution [7]

The multiples of 7 are _____

The multiples of 3 are

The common multiples are _____



Listing multiples help your child find common multiples.

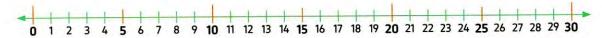
Exercise on lessons 4&5

Identifying Multiples of Whole Numbers

- Common Multiples
- REMEMBER
- UNDERSTANDAPPLY
- PROBLEM SOLVING
- III From the school book

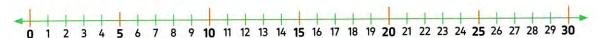
1. Skip counting on a number line. Draw a line connecting each number to show skip counting on the number line. Start at 0 each time.

a. Find the multiples of 2



The multiples of 2 are

b. Find the multiples of 5



The multiples of 5 are

2. Color the multiples. Use the hundreds chart.

a. Color the multiples of 9

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 9 are:

b. Color the multiples of 10

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 10 are:

3. a. Circle the numbers that are multiples of 6.

7 , 16 , 12 , 6 , 21 , 24 , 18

b. Circle the numbers that are multiples of 3.

6 , 17 , 21 , 15 , 10 , 36 , 29

c. Circle the numbers that are multiples of 8.

6 , 8 , 10 , 16 , 18 , 24 , 30 , 32 , 36

d. Which of the following is NOT a multiple of 4?

4 , 30 , 20 , 44 , 36

e. Which of the following is NOT a multiple of 5?

5 , 31 , 35 , 40 , 15 , 10 , 16

4. a. List 5 multiples of 7.

b. List 5 multiples of 8.

c. List the multiples of 3 up to 20.

d. List the multiples of 5 up to 30.

- e. List the multiples of 9 up to 60.
- 5. Find the missing multiple.

a. 5 , 10 , 15 ,

b. 8, 16, 24,

c. 10, 20, ,40

d. 70,80, ,100

e. 12, 15, , 21

f. 22 , , 44 , 55

g. 36, ,54,63

h. , 14 , 21 , 28

i. , 24 , 30 , 36

6. a. Find the multiples of each of the numbers 2 and 3 up to 20, then find the common multiples between them.

The multiples of 2 are:

The multiples of 3 are:

The common multiples are:

b. Find the multiples of each of the numbers 5 and 4 up to 30, then find the common multiples between them.

The multiples of 5 are:

The multiples of 4 are:

The common multiples are:

- 7. a. Find a common multiple of 4 and 8.
 - **b.** Find a common multiple of 7 and 3.
 - c. Find two common multiple of 6 and 9.
 - d. In Find two common multiples of 6 and 8.
 - e. III Find two common multiples of 5 and 7.
 - f. III Find two common multiples of 4 and 7.
- 8. Nagwa plans to visit her grandparents every fourth day in May. Her first visit will be May 4.

 How many times will she visit during May?
- 9. Writing About Math Tahani takes the bus home from school every day, but it does not take her directly to her house. After the bus drops Tahani off, she must walk the rest of the way home. The bus she takes stops every 4 kilometers as it leaves the school. If Tahani lives 18 km from school, how far does she have to walk home from the bus stop?
 Draw a picture to represent your thinking.

Challenge

- 10. a. Find two common multiples of 2, 3 and 5.
 - b. Find two common multiples of 6,4 and 10.

Multiple Choice Questions

Choose the correct answer.

The con	nmon multiple for	r all numbers	2. 0,8,16,24 are all multiples of the			
is —		(Cairo 23)	number ———	-	(Cairo 23)	
A . 0	B.	. 1	A. 0	B. 8		
C. 2	D.	. 3	C. 16	D. 24		
30 is a m	oultiple of number –	(Beheira 23)			(Cairo 23)	
A. 8	B.	. 7	A. 5	B . 7		
C . 6	D.	. 4	C. 9	D . 10		
is a multiple of 5. (Giza 23)			6. Which of the following is a multiple of 8?			
					[Alex. 23]	
A. 55	В.	503	A. 1	B . 2		
C . 326	D.	. 124	C. 4	D. 16		
7. Which is a common multiple of 5 and 8?			0	8. Which of the following is NOT a multiple		
			of 7?		(Luxor 22)	
A. 20	В.	40	A. 42	B. 63		
C . 35	D.	45	C . 707	D. 27		
	is—A. 0 C. 2 30 is a m A. 8 C. 6 A. 55 C. 326 Which is	is ————————————————————————————————————	A. 0 B. 1 C. 2 D. 3 30 is a multiple of number — [Beheira 23] A. 8 B. 7 C. 6 D. 4 — is a multiple of 5. [Giza 23] A. 55 B. 503 C. 326 D. 124 Which is a common multiple of 5 and 8? A. 20 B. 40	is (Cairo 23) A. 0 B. 1 C. 2 D. 3 A. 0 C. 16 30 is a multiple of number (Beheira 23) A. 8 B. 7 C. 6 D. 4 ——is a multiple of 5. (Giza 23) A. 5 C. 9 ——is a multiple of 5. (Giza 23) A. 1 C. 4 Which is a common multiple of 5 and 8? A. 20 B. 40 Number A. 0 C. 16 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 25 is a multiple of 6 A. 5 C. 9 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4	is (Cairo 23) A. 0 B. 1 C. 2 D. 3 A. 0 B. 8 C. 16 D. 24 30 is a multiple of number (Beheira 23) A. 8 B. 7 C. 6 D. 4 A. 5 B. 7 C. 9 D. 10 — is a multiple of 5. A. 5 B. 7 C. 9 D. 10 A. 55 B. 503 C. 326 D. 124 Which is a common multiple of 5 and 8? A. 1 B. 2 C. 4 D. 16 Which of the following is NOT a rof 7? A. 20 B. 40 A. 42 B. 63	

[Cairo - Khalifa and Mokattam 22]

A. 18

B. 27

C. 36

D. 42

- 10. Which list shows common multiples of 3 and 5?
 - A. 6, 15, 24
- B. 60,80,100
- C. 15, 30, 45
- D. 30, 40, 50
- 11. The common multiples of 6 and 8 are the same as the multiples of which number?
 - A. 8

B. 12

C. 20

D. 24

Relationships between Factors and Multiples

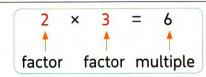
Learn

What is the relation between factors and multiples?

You can use multplication to find the relation between factors and multiples. For Example:

factor factor multiple

- The numbers 1 and 6 are factors of 6
- The number 6 is a multiple of each of 1 and 6



- The numbers 2 and 3 are factors of 6
- The number 6 is a multiple of each of 2 and 3

6

From above and the opposite factor rainbow you can say that:



Factor of







Multiple of

Example

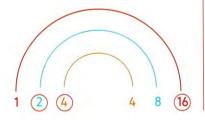
Making connection. Think about the relationships between the numbers 2, 4 and 16. Write at least two sentences describing what you notice.

Solution [V





- 2,4 and 16 are multiples of 2.
- 2,4,16 are factors of 16.
- 16 is a multiple of 2, 4 and 16.





Check

your understanding

Complete.

- a. $3 \times 8 = 24$, then 3 and 8 are of 24 and of each of 3 and 8.
- b. An even number is a multiple 3 and 4. It lies between 30 and 40, then this number is

Notes for parents:

- Help your child use a multiplication table to recognize the relation between factors and multiples.
- · Ask your child to explain the difference between a factor and a multiple.



Exercise 28 on lesson 6

Relationships between Factors and Multiples

	• REMEMBER • UNDERSTAND	O APPLY	PROBLEM SOLVING	From the school book
1.	Complete the following.			
	a. Write 3 multiples of 5	,	, —	
	b. Write 3 multiples of 6		· · · · · · · · · · · · · · · · · · ·	
	c. Write 3 factors of 30 —	,-	,	
	d. The numbers 1, 3, 9, 2	7 are facto	ors of ———	[El-Beheira - Kafr El-Dawwar 22]
	e. If 4 × 9 = 36, then			
	Also, ———— and — f. If $7 \times 3 =$ ——, then			numbers — and — and
2.	Answer the following ques	tions.		
	a. Is 2 a factor of 12?		b . ls6afa	ector of 24?
	c. Is 14 a multiple of 7?		d . Is 10 a r	multiple of 2?
	e . Is 24 a factor of 8?——		f. ls2am	ultiple of 4?
	g. Is 0 a multiple of 9?		h. Is 16 a n	nultiple of 3?
	i. Is 5 a factor of 25 or a mu	ltiple of 25	5? ————	
	j. Is 32 a factor of 8 or a mu	ltiple of 8	? ————	-
	k. Is 1 a factor of 9 or a mult	ple of 9?		
	l. What multiple of 7 is a fa	ctor of 7?		
3.	Making Connections. This	nk about t	he relationships betwe	en the numbers in each group.
	Write at least two sentence	s describ	ing what you notice.	
	a. 🛄 3,6 and 12 —			

- **b.** 4,8,16 and 24
- c. 2,4,3,12
- 4. Multiples Riddles. Read each riddle and solve. There may be more than one answer.
 - a. In the number is an odd number. It is a multiple of 3 and 5. It is greater than 20.

 What number is it?
 - **b.** The number is an even number. It is a multiple of 4 and 8. It is between 10 and 20. What number is it?
 - c. The number is an even number. It is a multiple of 3,4 and 6. What number is it?
 - d. An even number between 20 and 30. Some of its factors include 1, 2, 4, 7 and 14.
 What is it?
 [Suez 22]

Challenge

5. There is a number between 10 and 20 and it is a multiple of the number 4 and a factor of the number 24. What is this number?



Multiple Choice Questions

Choose the correct answer.

1.	is a	multiple of 8.	2. Multiples of 2 are	numbers.
	A. 2	B. 4	A. even	B. odd
	C. 10	D. 16	C. prime	
3.		ber which is a multiple of er is(Aswan 2		dd number that is nd 7.
	A. 60	B. 18	A . 7	B. 14
	C . 28	D. 12	C . 21	D. 42
5.	The correct rel	ation between the two nu	ımbers 6 and 18 is	(Cairo - El-Salam 23)
	A. 6 is a factor	of 18	B. 6 is a multiple	e of 18
	C. 18 is a facto	or of 6	D. 18 is the twice	e of 6
6.	Which of the fo	ollowing is true?		
	A. 5 is a multi	ple of 10	B. 10 is a factor of	of 5
	C. 5 is a factor	of 10	D. 6 is a multiple	of 4
7.	Which of the fo	ollowing is false?		
	A. 282 is a mu	ltiple of 2	B. 0 is a multiple	e of 7
	C. 3 is a factor	of 24	D. 8 is a factor of	14
8.	Which of the fo	ollowing statements dete	rmine the relation betwee	n the two numbers
•	7 and 49 is corr	rectly?		[Cairo - El-Salam 23]
	A. 7 is a multip	ole of 49	B. 7 is a factor of	49
	C //9 is a facto	rof7	D. Zeguals 9 tim	oc /.0

Unit Six Assessment



Choose the correct answer.

1. The prime number between 30 and 35 is

[Cairo 23]

[Cairo 23]

A. 31

B. 32

C. 33

D. 34

2. The number 8 has

factors.

[Cairo 23]

C. 4

D. 5

3. All the factors of 16 are

- A. 1,16
- B. 2,4,8

5. The number is the common factor of all numbers.

- C. 1,2,4,8,16
- D. 4,8,16

- 4. The number —
- is a multiple of the number 4

[El-Kalyoubia 23]

A. 3

B. 5

C. 18

(Giza 23)

[Alex. - El-Montaza 23]

A. 1

B. 0

C. 2

D. 3

D. 16

is not a multiple of 6

A. 30

B. 36

C. 16

D. 24

is a factor of 72

A. 5

B. 9

C. 7

D. 11

2. Complete.

1. The common factor for all numbers is —

[Cairo 23]

[Aswan 23]

- 2. is the common multiple for all numbers.
- [El-Monofia Sadat 23]
- 3. The number of factors of a prime number is
- [El-Menia Samlout 22]

4. The only even prime number is

(El-Sharkia 22)

- 5. The G.C.F of 4 and 8 is
- 6. The smallest odd prime number is —
- [El-Beheira Kafr El-Dawwar 22]
- 7. A number that has only two factors and their sum of 8 is —
- [Aswan Kom Ombo 22]
- 8. The missing factor in the opposite factor rainbow



[Luxor 22]

Choose the correct answer.

- 1. Which number is a multiple of 9?
 - A. 1

B. 3

C. 27

D. 30

Ť	A. 10	B. 15	C . 17	D . 12	
7.	Which of the follo	wing is a prime num	ber?		(Cairo 23)
	A. 1	B. 2	C . 3	D. 4	
6.	The number 7 has	factors.			(Cairo 23)
	A. 1	B . 2	C . 3	D. 4	
5.	The multiple of 4	is ———			(Giza 23)
Ť	A. 1	B. 2	C . 7	D. 11	
4.	is NOT	a prime number.			
	A. 15	B. 30	C . 40	D . 45	
3.	Which is NOT a co	mmon multiple of 3	and 5?		
	A. 10	B . 16	C . 20	D . 30	
2.	The number —	—— has the factor	s1,2,4,5,10,20.		

4. Answer the following.

- 1. An even number between 20 and 30, some of its factors include: 1, 2, 4, 7 and 14

 What is it? [Giza Awseem 23]
- 2. Find all factors of 30 and create a factor rainbow and T-chart.
- 3. Find the multiples of each of the numbers 8 and 12 up to 40, then find the common multiples between them.
- 4. Find the common factors and the greatest common factor [G.C.F] of 24 and 40.



THEME TWO

Mathematical Operations and Algebraic Thinking

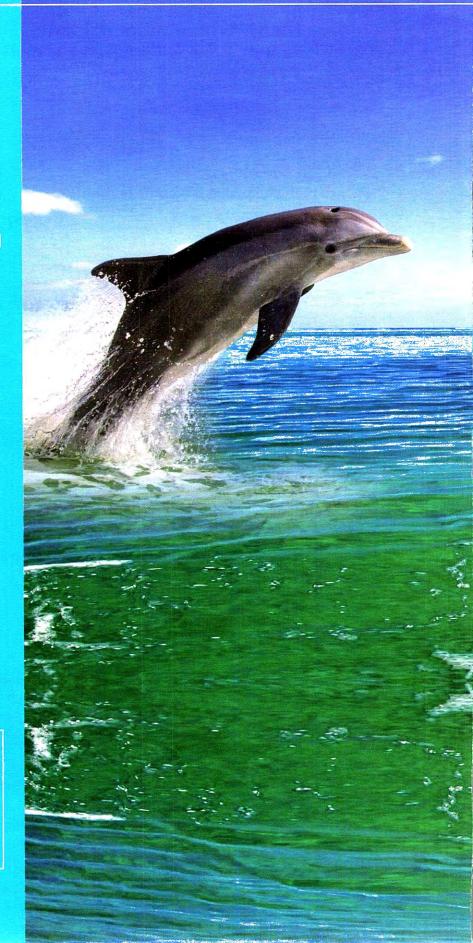
LIND TO

Multiplication and Division: Computation and Relationships

- ► Concept 1: Multiplying by 1-Digit and 2-Digit Factors
- ▶ Concept 2 : Dividing by 1-Digit Divisors

Fast Fact

A baby dolphin is called a calf. A calf eats 4 times each hour during the first week of life. How many times does it eat in a day during this time?



Concept

1

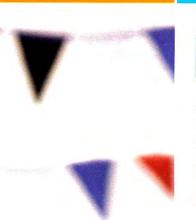
Multiplying by 1-Digit and 2-Digit Factors



	100				
Lesson No.	Lesson Name	Learning Objectives			
Lessons 1&2	The Area Model Strategy	 Students will use area models to represent two-digit by one-digit multiplication. Students will explain how they use place value to multiply. 			
	The Distributive Property	 Students will use an area model to multiply a one-digit number by a whole number with up to four digits. Students will explain the distributive property of multiplication. Students will apply the distributive property of multiplication to multiply a one-digit number by a whole number with up to four digits. 			
Lessons 3&4	The Partial Products Algorithm	• Students will use the partial products algorithm to multiply a one-digit number by a whole number with up to four digit.			
	Multiply by a One-Digit Number	 Students will estimate products of multi digit multiplication problems. Students will use the standard algorithm to multiply a one-digit number by a whole number with up to four digits. 			
Lesson 5	Multiply a Two- Digit Number by a Multiple of 10	 Students will identify patterns when multiplying two multiples of 10. Students will multiply a two-digit number by a multiple of 10. Students will assess the reasonableness of an answer using estimation and mental math. 			

1&2

- ▶ The Area Model Strategy
- **▶** The Distributive Property



Learn

How to multiply a 1-digit number by a 2-digit number ?

Mazen has 4 boxes of crayons.

Each box holds 12 crayons.

How many crayons does Mazen have in all?

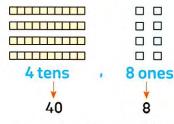
Multiply: 4×12

You can use any of these ways to multiply.



First: Model 2-digit multiplication

- - Model the problem 4 × 12 using base-ten blocks.



Then, $4 \times 12 = 40 + 8 = 48$ So, Mazen has 48 crayons in all.





Model the problem 4 × 12 using the rectangle area model.



Remember

Area of a rectangle = length × width



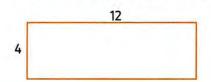


Notes for parents:

 Remind your child that when the number of ones blocks is 10 or greater, he/she needs to regroup 10 ones as 1 ten.

Step 1

Draw a rectangle where the smaller side shows 4 and the longer side shows 12.



Step 2

Decompose 12 using place value.

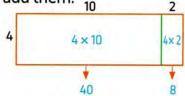
Step 3

Find the area of each of the new two rectangles, then add them. 10

$$•4 \times 10 = 40$$

$$-4 \times 2 = 8$$

So,
$$4 \times 12 = 40 + 8 = 48$$

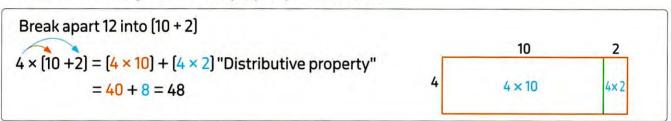


Third: Using the distributive property

You can use the distributive property to solve the problem 4×12 .

The distributive property states that multiplying a sum by a number is the same as multiplying each addend by the number and then adding the products.

• To find 4×12 using distributive property do as follow:

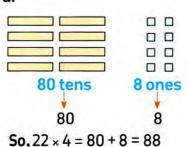


Example

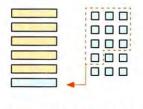
Use base-ten blocks to find each product.

Solution [V

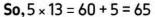
a.



b.



Regroup 10 ones as 1 ten





[•] While there are multiple ways to decompose a number, numbers should be decomposed using place value when using an area model for multiplication. For example, it is possible to decompose 23 in many different ways, including 17 and 6, 10 and 13, or 14 and 9. However, 23 should be decomposed into 20 and 3 when using an area model for multiplication.

Example 2

Draw an area model to find each product.

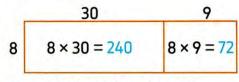
a. 6 × 51

Solution 🕎

a. 51 = 50 + 1

So.
$$6 \times 51 = 300 + 6 = 306$$

- b. 39 × 8
- **b.** 39 = 30 + 9



So.
$$39 \times 8 = 240 + 72 = 312$$

Example 3

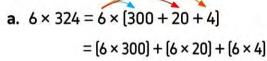
Use the distributive property to solve each problem.

a. 6×324

b. 7 × 2.915

c. 5×407

Solution [V



b.
$$7 \times 2,915 = 7 \times [2,000 + 900 + 10 + 5]$$

$$= (7 \times 2,000) + (7 \times 900) + (7 \times 10) + (7 \times 5)$$

$$= 14,000 + 6,300 + 70 + 35 = 20,405$$

c.
$$5 \times 407 = 5 \times (400 + 7)$$

$$= (5 \times 400) + (5 \times 7)$$

Check

Check your understanding

Solve each problem. Draw an area model to help you if necessary.

a. 7×29

b. 4 × 283

Notes for parents:

- Your child may incorrectly decompose the factors according to their digits rather than according to the value of their digits. He/She may decompose 24 as 2 and 4 rather than 20 and 4.
- Your child may get confused with how many zeros to place at the end of a product. For example, your child may write $7 \times 2,000 = 1,400$ instead of $7 \times 2,000 = 14,000$. Your child may also write $5 \times 200 = 100$ instead of $5 \times 200 = 1,000$

▶ The Area Model Strategy

- **▶** The Distributive Property
- REMEMBER
- UNDERSTAND
- O APPUY
- PROBLEM SOLVING
- From the school book
- 1. 🔲 Use a quick draw to solve each of the problems that follow.
 - a. 17×4

b. 21×3

c. 14 × 5

- 2. Draw an area model to solve each of the problems.
 - a. 32×7

b. 88 × 6

c. 91×4

d. 35×7

e. 249×5

f. 5×483

g. 7×723

h. 530 × 7

i. 4,734 × 5

j. 2,391 × 8

3. Use the distributive property to solve each problem.

a. 8×35

b. 7×68

c. 2×724

d. 3×684

e. 5 × 135

f. 8×214

g. $3 \times 1,476$

h. $9 \times 4,523$

i. $4 \times 9,035$

j. $8 \times 2,560$

4. Complete.

a.
$$5 \times 467 = 5 \times 400 + 5 \times ---- + 5 \times 7$$

b.
$$2 \times 139 = 2 \times -----+2 \times ----+2 \times 9$$

c.
$$4 \times 7,346 = 4 \times ---- + 4 \times 300 + 4 \times ---+ + 4 \times 6$$

d.
$$8 \times = 8 \times 500 + 8 \times 90 + 8 \times 2$$

e.
$$241 \times = 6 \times 200 + 6 \times 40 + 6 \times 1$$



5. By using an area model strategy, solve the problem that follows.

The route that the river bus travels is 58 kilometers long.

How many kilometers does the river bus travel if it follows this route 9 times daily?

[Aswan 23]

- 6. Answer each of the following problems. Draw an area model to help you if needed.
 - a. A city bus is 1,280 centimeters long. What is the length of 3 city buses?
 - b. There are 6 people who won 145 pounds each at the fair. How much money did they win all together?

 [El-Kalyoubia & Ismailia 22]

c. Twenty-two passengers can fit on each river bus at a time. What is the maximum number of passengers the river bus can carry if it makes 5 trips?

[Alexandria - Borg El-Arab 22]

7. Error Analysis. Examine the student work that follows. Identify what the student did correctly and incorrectly, and then try to solve the problem correctly.

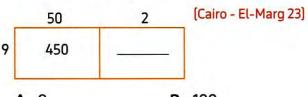
A student solved the problem 36 × 8 in the following way:

Explain your thinking.

Multiple Choice Questions

Choose the correct answer.

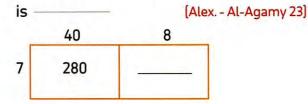
1. The opposite area model represents the product 9 × 52, then the missing value in the model is



A. 9

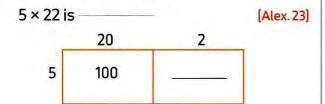
- **B.** 100
- C. 45
- D. 18

2. The opposite area model represents the product 7 × 48, then the missing value



- A. 28
- **B.** 78
- C. 56
- D. 15

3. In the opposite area model, the missing number of multiplying

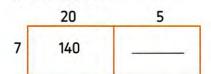


- A. 110
- **B.** 10

C. 7

D. 1

4. The opposite area model represents the product 7 × 25, then the missing value



in the model is -

- A. 14
- B. 140
- C. 35
- **D**. 350

5. The opposite area model equals



- A. 532
- **B.** 523
- C. 530
- D. 352

6. Which of the following represents 35 × 6?

(Kalyoubia 23)

[Giza 23]

- **A.** $[5 \times 6] + [30 \times 6]$
- **B.** $[5 \times 6] + [3 \times 6]$
- C. $[50 \times 6] \times [3 \times 6]$
- **D.** $[50 \times 6] \times [30 \times 6]$
- 7. 7 × 526 = 7 × [-----+ 20 + 6] [Cairo 23]
 - A. 5

- **B.** 50
- **C.** 500
- **D.** 5,000
- 8. $(7 \times 30) + (7 \times 5) = -$
- (Souhag 23)
- A. 7×53
- B. 70×53
- C. 73×75
- D. 7×35
- 9. Bassem saves 746 pounds monthly, then how much money does he save in 9 months?

[Cairo 23]

- A. 6,514
- B. 6,714

C. 6,914

D. 6,974

- ▶ The Partial Products Algorithm
- Multiply by a One-Digit Number

Learn 1 The partial products algorithm

If it takes 16 minutes to go around a pond on a boat at the zoo, how many minutes does it take to go around the pond twice?



Multiply: 16 × 2

Use the partial products algorithm as follows.



Multiply the tens.

Step 2

Multiply the ones.

$$\begin{array}{c}
16 \\
\times 2 \\
\hline
20 \\
12 \longrightarrow [6 \times 2]
\end{array}$$

Step 3

Add the products.

$$\begin{array}{r}
 16 \\
 \times 2 \\
 \hline
 20 \\
 + 12 \\
 \hline
 32
 \end{array}$$

So, it takes 32 minutes.

Hint

You can multiply the ones first, then multiply the tens as follows.

Step 1

Multiply the ones.

$$\begin{array}{c}
16 \\
\times 2 \\
\hline
12 \longrightarrow [6 \times 2]
\end{array}$$

Step 2

Multiply the tens.

$$\begin{array}{c}
16 \\
\times 2 \\
\hline
12 \\
20 \longrightarrow [10 \times 2]
\end{array}$$

Step 3

Add the products.

Notes for parents:

 Your child should recognize that the commutative property of multiplication allows us to write the factors in any order.



Example

Use the partial products algorithm to solve the following.

- $a.76 \times 3$
- **b.** 8×214
- c. $6 \times 1{,}352$

Solution [V]



$$\begin{array}{c}
76 \\
\times 3 \\
\hline
210 \longrightarrow [70 \times 3] \text{"Multiplying the tens"} \\
+ 18 \\
\hline
228
\end{array}$$

$$\begin{array}{c}
(6 \times 3) \text{"Multiplying the ones"}
\end{array}$$







Check your understanding

Fill in the blanks with the missing numbers to multiply.

Notes for parents:

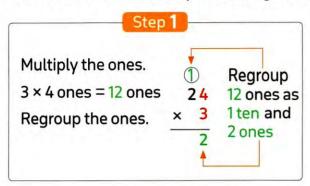
Remind your child to line up the products carefully according to the place value.



Learn 2 Multiplying by a 1-digit number using standard algorithm

Find: 24 × 3

You can use the standard multiplication algorithm.



Multiply the tens.	1
$3 \times 2 \text{ tens} = 6 \text{ tens}$	× 3
, then add the	72
regrouped ten	12
6 tens +1 ten = 7 tens	

So, $24 \times 3 = 72$

Hint

You can write the products in a short way as the following examples.

Example 2

Use the standard multiplication algorithm to solve the following.

a. 6×512

b. 2,194 × 7



a. ① 512



b. ① ⑥ ② 2, 1 9 4 × 7 15, 3 5 8

V 6

Check your understanding

Find the products.

a. 56 × 4

- **b.** 3 × 174
 - J ^ 1/4
- c. 4,015 × 2

- Your child sometimes has difficulty demonstrating proper regrouping when using the standard algorithm for multiplication. He/She may omit writing the digit above the correct place or he/she may attempt to place two digits at a time in the product.
- Train your child to use the short way to find the products.

Learn 3 Estimate products - Choose a strategy



Esimate the product. Multiply to check.

 $\mathbf{a}. 3 \times 62$

Solution [V]

a. Round 62 to the greatest place value.

$$3 \times 62$$
 $3 \times 60 = 180$

The actual product:

[Using the partial products algorithm]

$$\begin{array}{c}
62 \\
\times 3 \\
\hline
180 \longrightarrow [3 \times 60] \\
+ 6 \longrightarrow [3 \times 2]
\end{array}$$

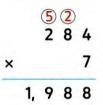
b.
$$284 \times 7$$

b. Round to the nearest ten

$$\begin{array}{ccc}
284 & \longrightarrow & 280 \\
\times & 7 & \times & 7 \\
\hline
& 1,960
\end{array}$$

The actual product: (Using the Standard

Multiplication Strategy)



/	e	he	C	k

your understanding

Estimate the product. Choose a strategy to find the actual product.

a. 87 × 6

b.	764
×	5
-	

c.
$$4 \times 341$$

Notes for parents:

- · Let your child use rounding to check the reasonableness of the answer.
- · Your child may has difficulty determining the number of zeros in a product when multiplying by multiples of 10. especially when the product of the basic fact ends in zero. For example, your child may think that $80 \times 5 = 40$ rather than 4.00

Exercise on lessons 3&4

► The Partial Products Algorithm

- ► Multiply by a One-Digit Number
- REMEMBER
 UNDERSTAND
 APPLY
- PROBLEM SOLVING
- From the school book

- 1. Fill in the blanks with the missing numbers.
 - a.

c. 🛄

2. Solve using the partial products algorithm.





b. 29 × 4



c. 5×343



d. 46 × 678

e. 284×4



f. 305×7



g. $3 \times 2,539$



h. $4,731 \times 4$



3. Solve using the standard algorithm.

 $a.7 \times 30$



b. 27×3



 $c.4 \times 800$



d. 126×7



e. 🛄 630 × 5



f. 204×2



~	735	V	Е
	177	^	



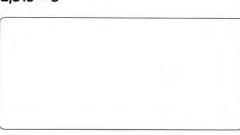
h.
$$1,390 \times 2$$



i. 2,213 × 4



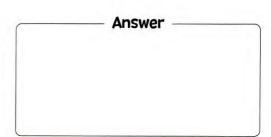
j.
$$2,513 \times 3$$



4. Estimate the product, then solve using the standard algorithm as in the example.

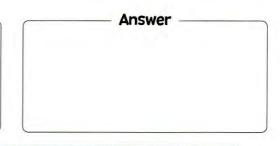
a.

Estimate



b.

Estimate



C.

	1	34
×		2

Estimate

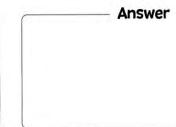
Answer —	

REMEMBER

d.



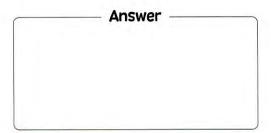
Estimate



e.



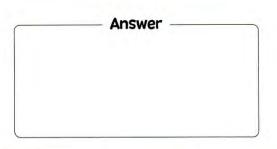
Estimate -



f.



Estimate



5. Three students tried solving 328 × 2 using the standard algorithm. Explain who you think solved the problem correctly and identify at least one error in another student's solution.

Student 1

	3.	28
×		2
	,	46

Student 2

$$\begin{array}{r}
 & 1 \\
 & 328 \\
 \times & 2 \\
\hline
 & 656
\end{array}$$

Student 3

	32	8
×		2

6. Answer the following.

a. Twenty two passengers can fit on each river bus at a time.

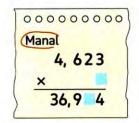
What is the maximum number of passengers the river bus can carry if it makes 5 trips?

(Cairo 23)

b.	A library has 5 shelves and each shelve has 35 books in the library?	books. What is the total number of [Giza 23]
c.	Ahmed bought 4 balls, if the price of each ball pay?	is 85 pounds, how much money did he [Giza - Abo El-Nomros 23]
d.	There are 6 people who won 145 pounds each	
	win all together?	(Giza - Awseem 23)
e.	5 people participated in an exhibition and each	n one of them won 150 pounds, how
	much money did they all win?	(Souhag 23)
f.	If mass of a box is 124 kg, then find the mass of	5 boxes with the same mass.
		(Monofia - Sadat City 23)
g.	A factory produced 4,256 toys in each month.	How many toys were produced in
	3 months?	(Cairo - El-Marg 23)



7. Find the missing numbers on Manal paper.Explain your thinking.



Multiple Choice Questions

Choose the correct answer.

[Cairo 23]

[Cairo - El-Nozha 23]

B. 63

B. 123

D. 83

D. 68

A. 63

C. 278

A. 60

C. 1,410

A. 2,648

B. 8,462

C. 26,480

D. 2,688

6. 504 × 6 =

A. 324

B. 30,240

C. 3,240

D. 3,024

7. The product of 192 × 3 is near close

to

A. 400

C. 600

8. Which product is NOT correct?

A.
$$63 \times 4 = 252$$

B.
$$3 \times 48 = 144$$

C.
$$7 \times 27 = 149$$

D.
$$6 \times 153 = 918$$

9. Which partial products can be used to solve
$$[35 \times 6]$$
?

B. 500

D. 700

[Monofia - Sers El-Layyan 23] [Aswan - Kom Ombo 22]

A.
$$[3 \times 6] \times [50 \times 6]$$

C.
$$[30 \times 6] + [5 \times 6]$$

B.
$$[30 \times 6] \times [50 \times 6]$$

D.
$$[3 \times 6] + [5 \times 6]$$

10. What is the ones digit of the product of 53×6 will be without solving the whole problem?

A. 3

B. 6

C. 8

D. 9

Multiply a Two-Digit Number by a Multiple of 10

Learn 1 Multiplying two multiples of 10

Essam bought 20 statues for 30 pounds each as souvenirs, how much money did he pay?



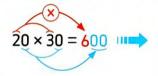
Remember

The numbers 10, 20, 30, 40,... are multiples of 10.



 20×30

How to find the product of 20×30 .



- Multiply $2 \times 3 = 6$ (Basic Fact)
- Put 00 on the right to get the number 600.

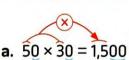
So, he paid 600 pounds.

Example 1

Find the product.

a. 50×30

b. 40×70



b. $40 \times 70 = 2,800$

Check

your understanding

1. Multiply: 70 × 40

2. Multiply: 80 × 90

Notes for parents:

· Let your child notice that the product has as many zeroes as the total number of zeroes in the factors plus any additional zeroes in the basic fact product.

255

Learn 2 Multiplying a 2-digit number by a multiple of 10

A primary school is formed of 30 classes of 25 pupils each.

Calculate the total number of pupils.

Multiply:

 30×25

You can use the area model.

	20	5
30	$30 \times 20 = 600$	30 × 5 = 150



 $30 \times 25 = 600 + 150 = 750$

So, the total number of pupils is 750.

Example 2

Multiply.

a. 60×17

b. 48 × 90

Solution [V]



a. $60 \times 17 = 600 + 420$ = 1,020

7 10 60 $60 \times 10 = 600$ $60 \times 7 = 420$

b. $48 \times 90 = 3,600 + 720$ =4,320

 $90 \times 8 = 720$ 90 $90 \times 40 = 3,600$

40

8

check your understanding

Multiply: 28 × 70 Work area

Notes for parents:

• Let your child notice that the product of any number and a multiple of 10 has a zero in the ones place.

Exercise 31

Multiply a Two-Digit Number by a Multiple of 10

REMEMBER

UNDERSTAND

O APPLY

PROBLEM SOLVING

III From the school book

1. Find the following products.

a.
$$20 \times 70 =$$
 [Cairo 23]

2. Complete the table.

	Problem	Area Model	Numbers and symbols
a.	40 × 62		2,480
b.	70 × 55		
c.	54 × 30		
d.	40 × 78		-
e.	44 × 20		
f.	15 × 30	-	
g.	10 × 40		
h.	72 × 40		

3. Solve.

4. Error Analysis.

Examine the student's work. Is his answer reasonable? How do you know? Explain your thinking.

[Dakahlia 22]

$$22 \times 50 = [20 + 2] \times 50 = [20 \times 50] + [2 \times 50] = 100 + 100 = 200$$

5. Answer the following.

a. A merchant bought 20 boxes of soft drinks for 40 pounds each. How much money did he pay?



b. A group of 38 people want to travel by bus.
Each bus ticket costs 30 L.E. How much do they need to pay in all?



c. The book store ordered 12 boxes of a new book.
There were 30 books in each box. How many copies of the book did they recieve?



Multiple Choice Questions

Choose the correct answer.

[Giza - Abo El-Nomros 23]

A. 420

- B. 4,200
- C. 42,000
- **D**. 2,400
- 2. 40 × 90 =
 - A. 36
 - C. 3,600
- **B**. 360
- D. 36,000

A. 30

B. 35

C. 50

D. 53

40 × 30 = 1,200 | 40 × 5 = 200

30

- 4. 19 × 30 =
 - **A.** 57
 - C. 273
- **B.** 1,930
- **D**. 570

- 5. The opposite model represents the product of _____
 - A. 40×35
 - 4 × 35
 - **B.** 4 × 35
 - **C.** 40 × 30
 - **D.** 45×30

- 6. The missing value in the opposite model
 - is _____
 - **A.** $2 \times 7 = 14$
 - **B.** $10 \times 7 = 70$
- 10 20 × 10 = 200
- **C.** $20 \times 7 = 14$
- **D.** $20 \times 7 = 140$
- 7. Mina runs 12 hours every week. What is the number of running hours in 10 weeks?
 - **A.** 12

B. 102

C. 120

- D. 22
- 8. Mona made 10 bracelets. There are 13 beads on each bracelet. How many beads are there on all 10 bracelets?
 - **A.** 103
- **B.** 113

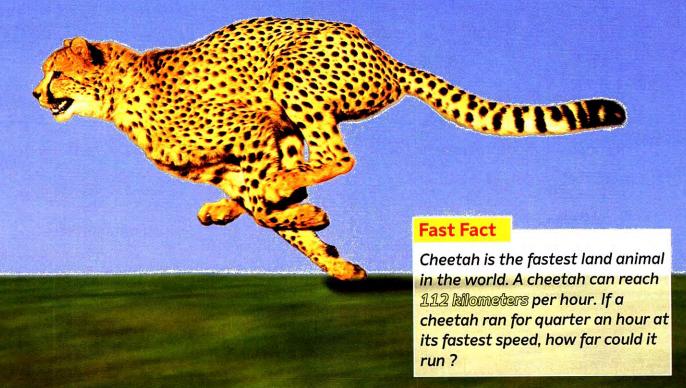
C. 130

D. 1,300

Concept

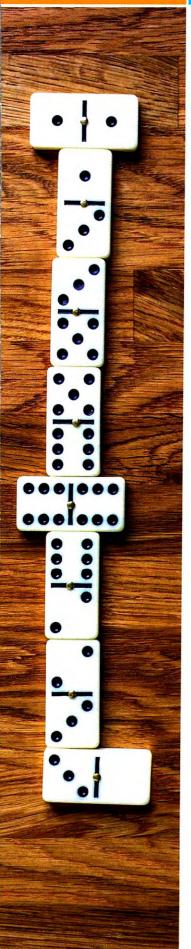
2

Dividing by 1-Digit Divisors



Lesson No.	Lesson Name	Learning Objectives
Lesson 6	Exploring Remainders	 Students will identify the dividend, divisor, and quotient of a division problem. Students will solve division problems. Students will explain what a remainder represents in a division problem.
Lesson 7	Patterns in Division	• Students will use place value, multiplication facts, and patterns with zeros to divide multiples of 10, 100 and 1,000 by one-digit divisors.
Lesson 8	The Area Model and Division	Students will use area models to represent and solve division problems.
Lessons 9&10	The Partial Quotients Algorithm	Students will use the partial quotients algorithm to divide dividends with up to four digits by one-digit divisors.
	The Standard Division Algorithm	 Students will estimate quotients using properties of place value and patterns in multiplication and division. Students will use the standard algorithm to solve division problems.
Lesson 11	Division and Multiplication	 Students will use properties of place value to accurately record quotients. Students will use the relationship between multiplication and division to check the accuracy of quotients.

Exploring Remainders



Learn

Three friends are playing a game of dominoes. There are 28 dominoes in the set. If each player receives the same number of dominoes, how many dominoes will each player get? How many dominoes will be left over?

 This problem would be solved using division. Sometimes a number cannot be divided evenly. The amount left over is called the remainder.



Divide: 28 by 3. Write 28 ÷ 3

Step 1 Step 2 Use 28 counters Draw 3 circles. Divide the 28 counters into 3 equal groups. The counter left over is the remainder. The quotient is 9 and the remainder is 1

Then: 28 dividend divisor quotient remainder

So, each player will get 9 dominoes. There will be 1 domino left over.

-Math Hint-

The sum of the digit 2 and 8 is 10 and 10 is not existing when skip counting by 3s so, there will be a remainder.

ERROR

Note that

If the number is divided equally, the remainder is 0

Examples: $27 \div 3 = 9 R O$

 $40 \div 8 = 5 R O$

ALERT If the remainder is greater than the divisor, keep dividing the counters evenly until the remainder is less than the divisor.

Notes for parents:

· Ask your child what the numbers in the equation represent in the problem. Label the numbers in the equation with the correct vocabulary words. 261

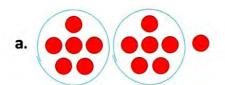
Example

Find the quotient and the remainder. You may use counters to model.

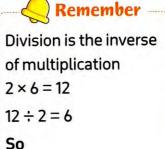
- a. $13 \div 2$
- **b.** $23 \div 4$

c. $32 \div 3$

Solution W

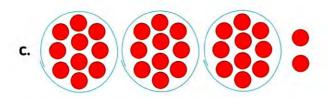


 $13 \div 2 = 6R1$





 $13 \div 2 = 6R1$ because $13 = (2 \times 6) + 1$



 $32 \div 3 = 10 R 2$

Note that The remainder is always less than the divisor.

Example 2

There are 62 students in fourth grade in a school. Each table in the library room seats six students. How many tables are needed to seat all fourth graders?

Solution [V]

This problem would be solved using division $62 \div 6 = 10 R 2$ 11 tables are needed (10 tables will be filled and one more table is needed for the 2 extra students S_0 , 10 + 1 = 11 tables are needed.



Check your understanding

Find the quotient and the remainder. You may use counters to model.

a. $17 \div 5$

b. $26 \div 6$

c. 9 ÷ 2

Notes for parents: • Your child may be confused by having a remainder in a division problem. He/She may try to place the remainder into an existing group or into an additional group, both leading to unequal sharing.

on lesson 6

Exploring Remainders

REMEMBER

UNDERSTAND

O APPLY

PROBLEM SOLVING

From the school book

1. Find each quotient and remainder. Complete the following.

2. Find each quotient and remainder.

3. Find each quotient and remainder. Circle all the problems which has 0 left over.

h. $93 \div 9 = -$

4. Complete.

a.
$$45 \div 5 = 9$$
, then the divisor is

f.
$$26 \div 5 =$$
 and the reminder is

_				and the second		
5	Solve	the	foll	lowing	prob	lems.
•	JULY	6116	100	CITITIO	PION	

a. 🔝 Saleem brought 15 pies to give to 4 of his friends. How can Saleem share the pies equally? What is left?

b. Rose has 19 biscuits to give to her 9 friends.

How can Rose share the biscuits equally? What is left?

c. A full box of crayons contains 8 crayons. If each of the 42 students in a class needs to use 1 crayon at the same time in a class activity , how many boxes of crayons are needed for all the students?

d. There are 48 mugs that need to be put in boxes and shipped. Five mugs can fit in each box. How many boxes will be needed to ship the mugs?

e. Going to a Swim Meet. The swim team is taking a bus to a swim meet. Each bus seats 40 students. Sixty students will attend the meet. How many buses are needed? Use numbers, words, and symbols to explain your thinking.

Challenge

6. Each page of Ahmed's album holds 4 photographs. He filled all 9 pages and still had 3 photos left over.

How many photos did Ahmed have to start with?

Multiple Choice Questions

Choose the correct answer.

 The divisor in the following operation $91 \div 7 = 13 \text{ is}$

[Giza - Abo El-Nomros 23]

A. 7

- **B.** 13
- C. 75
- D. 91

2. If $700 \div 10 = 70$, then the dividend is-

(Souhag 23)

A. 1

- **B**. 10
- C. 70
- **D.** 700

3. $46 \div 9 = 5 R1$, then the dividend is

[Giza 23]

- A. 46
- B. 9

C. 1

D. 5

4. 37 ÷ 9 = 4 and remainder -

[Cairo - Rod El-Farag 23]

A. 1

B. 3

C. 4

D. 2

5. The reminder of dividing 37 by 5 is-

(Giza 23)

A. 2

B. 7

C. 5

D. 1

- 6. 11 ÷ 3 =
- (Ismaillia 23)
- A. 3R1
- B. 4R1
- C. 3R2
- D. 4R2

- 7. 52 pounds distributed equally among
 - 6 friends, then the remainder is —

pounds.

[Giza - Awseem 23]

A. 2

B. 4

C. 3

D. 5

- 8. If 37 oranges are distributed equally
 - among 5 plates, how many oranges will

be left?

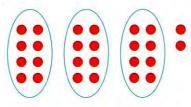
[Monofia - Berket El-Sabaa 23]

A. 5 C. 7

D. 0

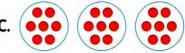
B. 2

9. Which division problem does the model show?



- A. $24 \div 3 = 8$
- **B.** $23 \div 3 = 7R2$
- C. $26 \div 3 = 8 R 2$
- **D.** $21 \div 3 = 7$

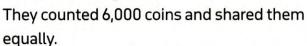
- **10.** Which of the following shows $22 \div 3$?
 - A. 22 dots in each of 3 circles.
 - B. 3 circles, two with 7 dots and one with 8 dots.

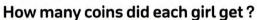


Patterns in Division



Sara's family collected coins, when the jar was full, Sara's father gave the coins to his three daughters.

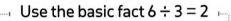




Divide: 6.000 ÷ 3

Basic facts, pattern and place value can help you divide.

Three zeroes



$$6 \div 3 = 2$$
 $6 \ 0 \div 3 = 2 \ 0$
 $6 \ 0 \ 0 \div 3 = 2 \ 0 \ 0$
 $6, \ 0 \ 0 \ 0 \div 3 = 2, \ 0 \ 0 \ 0$

So, each girl got 2,000 coins.

What do you notice about the pattern of zeroes?







Remember

 $6 \div 3 = 2$

6 is called the dividend 3 is called the divisor 2 is called the quotient



Three zeroes

Use patterns to find the quotient.

a.
$$8 \div 2 =$$
 b. $15 \div 5 =$ **c.** $20 \div 4 =$

$$8,000 \div 2 = -$$

$$2,000 \div 4 = -$$

$$20,000 \div 4 = -$$

Solution [V]



Notes for parents:

- Your child may only look at the place with the highest value and try to divide. For example, with $2,400 \div 3$, he/she may try to solve $2 \div 3$ instead of $24 \div 3$.
- · Your child may be confused by how many zeroes to put in a quotient, especially when the basic fact includes a zero. For example, the basic fact for $2,000 \div 4$ is $20 \div 4 = 5$. The quotient is 500 since there are two other zeroes in the dividend.



Example 2

Write the basic fact that you can use to solve these problems. Then solve each problem.

	Problem	Basic Fact	Quotient
a.	90 ÷ 3		
b.	160 ÷ 2		
c.	5,500 ÷ 5		

Solution [V]

	Problem	Basic Fact	Quotient
a.	90 ÷ 3	9 ÷ 3 = 3	30
b.	160 ÷ 2	16 ÷ 2 = 8	80
c.	5,500 ÷ 5	55 ÷ 5 = 11	1,100

Example 3

Complete each missing number.

b.
$$\div$$
 3 = 100

Solution [V



Check your understanding

1. Use patterns and place value to find each quotient.

2. How can you use $16 \div 4 = 4$ to help you find $160 \div 4$?

on lesson 7

Patterns in Division

1. Use patterns and place value to find each quotient.

2. Division Patterns Label the parts in the equation using the words divisor, dividend, and quotient. Then, look for patterns to complete the remaining problems. The first problem in the table is an example that is filled in for you.

Equation	Basic (Related) Fact	Quotient
600 ÷ 3	6 ÷ 3 = 2	200
150 ÷ 5		
1,200 ÷ 6		
200 ÷ 4		
700 ÷ 7		
6,400 ÷ 8		
4,500 ÷ 9		
270 ÷ 3		

3. Find each quotient.

(Cairo - El-Nozha 23)
n.
$$81,000 \div 9 =$$

f.
$$550 \div 5 =$$
 [Giza - Awseem 23]

Complete the missing numbers.

j.
$$\div 9 = 9,000$$

m.
$$\div 5 = 5,000$$

k.
$$\div 3 = 8,000$$

n.
$$\div 6 = 8,000$$

f.
$$\div 4 = 700$$

o.
$$\div$$
 7 = 6,000

5. Solve the following problems.



a. Mrs. Farida's class is 60 minutes long. She wants to divide her class time into 3 equal periods. How long will each period be?

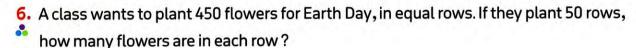
b. Bassem is reading a book of 180 pages. If he reads 9 pages per day, how long will it take him to finish the book?

c. At a primary school, the students collected 3,000 pounds as a donation to kids Hospital. Each student donated 5 pounds. How many students donated?

d. Riding the Metro

There are 8,100 people that need to get to work on Monday morning at 7:00 a.m. They all want to take the metro to work. There are 9 cars on each metro. If 90 people can fit in each car, can all the people take the same metro to work? Explain your thinking using numbers, words and symbols.

Challenge



Multiple Choice Questions

Choose the correct answer.

C. 90

A. 1

[Cairo - El-Nozha 23]

 \div 7 = 300

13.
$$\rightarrow$$
 tens \div 8 = 5 tens

- hundreds
$$\div$$
 5 = 20 tens

8

The Area Model and Division



Learn

Bassem's family drove 615 kilometers in 3 days. They drove the same number of kilometers every day.

How many kilometers did they drive per day?



Divide: $615 \div 3$

You can use an area model for division.



Draw a long rectangle and write 3 on the smaller left side of the rectangle.

Think -

615 = 600 + 15



Since $3 \times 200 = 600$, then 600 is a multiple of 3 which is the divisor in this problem.

Draw a vertical line inside the rectangle. Write $3 \times 200 = 600$ inside the section of the model and 200 underneath.

Remember

Area of rectangle = length × width

Step 3

Since $3 \times 5 = 15$, then 15 is a multiple of 3 which is the divisor in this problem. Write $3 \times 5 = 15$ inside the empty section of the model and 5 underneath.

$$3 \times 200 = 600 \qquad 3 \times 5 = 15$$

$$200 \qquad 5 \qquad R0$$

Notes for parents:

• Your child may get confused with how many zeroes to place at the end of a product. For example, he/she may write $7 \times 3,000 = 2,100$ instead of $7 \times 3,000 = 21,000$. Your child may also write $4 \times 500 = 200$ instead of $4 \times 500 = 2,000$



Step 4

Check your answers and there is no left over.

Add the areas: 600 + 15 = 615 R 0 [no remainder]

Add the sides: 200 + 5 = 205

then: $615 \div 3 = 205$

They drove 205 kilometers per day for 3 days.



Example

Draw an area model to solve each problem.

- a. $69 \div 3$
- **b.** $825 \div 4$

c. $3,600 \div 6$

Remember Check the left over in each problem.

Solution W



a. Think: 69 = 60 + 9

Add the areas: 60 + 9 = 69 R O (no remainder)

Add the sides: 20 + 3 = 23

So, $69 \div 3 = 23$

b. Think: 825 = 800 + 25, 25 = 24 + 1

Add the areas: 800 + 24 + 1 = 825

Add the sides: 200 + 6 R1 = 206 R1

So, $825 \div 4 = 206 R1$

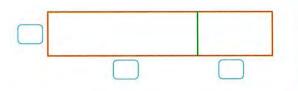
 $6 \times 600 = 3.600$ 600

So, $3,600 \div 6 = 600$ [no remainder]

Check your understanding

Use the area to model the following problem.

 $535 \div 5$



Notes for parents:

• Your child may have difficulty determining which multiples to use to start decomposing a dividend when using an area model. It is most effective and efficient to start with multiplying the divisor by 10, 100 or 1,000. For example, for 256 \div 8, it is helpful to begin with 8 × 10 = 80 and to work up to 256.

The Area Model and Division

	-	м	-	м	w	

-		-	-	_	0.	- 4		-
-	UN	н	ы	W	5	ΙΔ	N	п
-	011	•	-	м	J			u

O APPLY





1. Use the area model to solve each of the following.

a.
$$64 \div 2$$





c.
$$217 \div 5$$









2. Use the area model to solve the problems. Show your work.

a.
$$48 \div 4$$

d.
$$3,200 \div 8$$

Solve each problem using an area model.

a. Sylvia is sharing her muffines. If she shares 63 muffines among 3 groups of people, what is the share of each group?



b. An organization donated 89 books to a school. The books will be shared among 6 classrooms. How many books will each classroom get?



c. Rashida saved 545 L.E. to buy a toy car. She did this by saving 5 L.E. every day she worked around her neighborhood. How many days did she have to work to save enough money to buy a toy car?



d. Amir bought a book of stickers. There were 92 stickers in the book. He wanted to give them to 4 of his friends. How many stickers will each of his friends get?

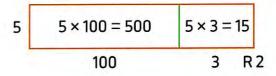


e. Writing About Math. There are 492 cars that need to park at the stadium. The stadium has 4 parking lots. The stadium wants the same number of cars to park in each lot. How could you use the previous problem to help you solve $492 \div 4$? Use words, numbers and symbols to explain your thinking.

Multiple Choice Questions

Choose the correct answer.

- 1. In the opposite area model, which choice best represents the problem?
 - **A.** $515 \div 5$
- **B.** 502 ÷ 5
- **C.** $512 \div 5$
- **D.** 517 ÷ 5



- 2. Using the following area model, the quotient equals
 - uals [Monofia Berket El-Sabaa 23]

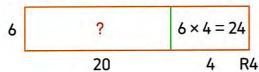
A. 545

B. 109

C. 100

D. 9

- 5 5 × 100 = 500 5 × 9 = 45 100 9
- 3. Which number best completes the area model to find 148 \div 6?



The value of? is ——

A. $6 \times 2 = 12$

B. $6 \times 20 = 120$

C. 20 + 4 = 24

- **D.** 20+4+2=26
- 4. Maha use the opposite model of rectangle area to find the result of $369 \div 3$, then M =

100

A. 123

C. 3

B. 9

D. 396

- 3 300
- 20 3 60 M
- (Cairo El-Salam. 23)

5. 312 ÷ 3 =

- [Giza 23]
- 6. 606 ÷ 6 =

[Alex. 23]

A. 14

B. 13

- A. 101
- B. 11

- C. 401
- **D**. 104

- C. 100
- D. 16

- **7.** 963 ÷ 3 = ____
- [Beheira Hosh Essa 23]
- 8. 240 ÷ 4 = ____
- (Beheira 23)

- A. 321
- **B.** 333

A. 6

B. 60

- C. 222
- D. 111

C. 8

- D. 40
- 9. A chicken farmer uses egg cartons made from recycled material. If 6 eggs fit into eachcarton, how many cartons will he need for 312 eggs?
 - A. 50 cartons

B. 51 cartons

C. 52 cartons

D. 53 cartons

Lessons 9 & 10

- ▶ The Partial Quotients Algorithm
- ► The Standard Division Algorithm

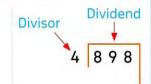
Learn 1 The partial quotients algorithm

Bassem packs the cakes in groups of 4 to sell in his market.

If an order calls for 898 cakes, how many packages will Bassem need?

Divide: 898 by 4

1. Draw a line as shown in the figure.



- 2. Look at the dividend, start from the left there are 8 in the hundreds place = 800
 - 800 is a multiple of 4 because 4 × 200 = 800
 - Then write 200 to the right of the line (part of the quotient).

- 4 8 9 8 200
- **3.** Write 800 under the dividend and subtract from 898, you will get 98.

4. Write a multiple of 4 that is under 98 and subtract [note 4 × 10 = 40], then write 10 to the right of the line as a part of quotient.

Notes for parents:

• Remind your child to start division from the left.

5. Repeat writing a multiple of 4 under 58 and subtract [note $4 \times 10 = 40 < 58$] and write 10 as a part of quotient to the right of the line.

6. Write a multiple of 4 that is close to 18 [note $4 \times 4 = 16 < 18$], then write 16 under 18 and subtract and write 4 as a part of quotient to the right of the line.

• Then the quotient =
$$200 + 10 + 10 + 4$$

= 224

• Then
$$898 \div 4 = 224$$
 and the remainder = 2

Note that

4 does not divide 898 equally because there is a remainder = 2

4	898	200
_	800	
	98	10
-	4 0	
	5 8	10
-	4 0	
	1 8	4
-	16	
	12	
em	ainder	

Notes

- Always the remainder must be less than the divisor.
- The dividend = divisor × quotient + remainder



Example 1

Divide.

a.
$$78 \div 6$$

a.
$$/8 \div 6$$

$$78 \div 6 = 10 + 3 = 13$$

b.
$$658 \div 3$$

$$658 \div 3 = 200 + 10 + 9 = 219$$

and the remainder = 1

[·] Your child may use any multiple of divisor to divide.

Learn 2 Estimating quotients

- Sometimes you only need to find an estimation.
- One way to estimate quotients is to substitute numbers that make mental math simpler.

For Example:

To estimate the quotient of $257 \div 6$, do as follows:

First

The dividend 257 is between 240 and 300.

[Note: 240 and 300 are multiples of the divisor 6].

Second

 $240 \div 6 = 40$ and $300 \div 6 = 50$

So, the quotient of $257 \div 6$ is between 40 and 50.



Example 2 -

Estimate the quotient of 63 ÷ 4

Solution [V



The dividend 63 is between 40 and 80.

- , then $40 \div 4 = 10$ and $80 \div 4 = 20$
- , then the quotient is between 10 and 20.



Check your understanding

1. Use the partial quotient algorithm to divide.



b. $783 \div 5$



c. $7,320 \div 6$



2. Estimate each quotient.



b. $587 \div 2$

c. $762 \div 9$

Notes for parents:

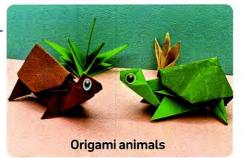
- · Discuss the purpose of rounding versus using basic facts to estimate by asking your child which method makes the problem easier to calculate mentally. Demonstrate how using a basic fact makes estimating easier for 257 ÷ 6 by having your child try to find each of these quotients mentally: 300 ÷ 6, 240 ÷ 6.
- · Make sure your child use basic facts and place-value pattern to divide.

Learn (3) The standard division algorithm

Students in the third, fourth and fifth grades made 525 origami animals to display in the library. If each grade made the same number of animals, how many animals did each grade make?

Divide: 525 ÷ 3

or 3 5 2 5



Origami is the Japanese art of folding paper into different shapes.

Step 1

Divide the hundreds.

Divide 5 ÷ 3

Step 2

Bring down the tens. Divide the tens.

Bring down the tens. Divide 22 ÷ 3

Multiply 7×3

Subtract 22 - 21

Compare 1 < 3

Step 3

Bring down the ones. Divide the ones.

Bring down the ones.

Divide 15 ÷ 3

Multiply 5 × 3

Subtract 15 - 15

Compare 0 < 3

Remember ---

After you divide the hundreds, tens or ones place, the remainder should always be less than the divisor.

So, each grade made 175 origami animals.

Check Multiply

 $3 \times 175 = 525$

The product equals the dividend

Other Examples:

a. With a remainder

b. Zero in the dividend

MATH IDEA

The order of division is as follows:

> Divide Multiply Subtract

Compare Bring down

Repeat this order until the division is complete.

[•] To help your child remember all steps in the division algorithm, let him/her use the following memoric or make up one of his/her own: Don't Make Silly Careless Blunders (Divide. Multiply. Subtract. Compare. Bring down).

Example 3

Divide: 1,765 ÷ 4

Solution [V]



Steps: Divide, multiply, subtract, compare, bring down.



Step 2

044	
4 <mark>1,765</mark> - 16 •	Bring down the tens Bring down 6 Divide 16 ÷ 4
16 - 16	Multiply 4 × 4 Subtract 16 – 16
0	Compare 0 < 4

Step 3

0441	R1
4 1,765	Bring down the ones
- 16	Bring down 5
	Divide 5 ÷ 4
16	Multiply 1 × 4
<u>- 16 +</u>	Subtract 5 – 4
05	Compare 1 < 4
- 4	The remainder = 1
1	

Then, $1,765 \div 4 = 441 R1$

Example 4

Divide: 432 ÷ 4

Solution [V]



(Zero in the quotient)

Step 1

Divide the 4 hundreds.

Step 2

Bring down the 3 tens. Divide the 3 tens.

Step 3

Bring down the 2 ones. Divide the 32 ones.

Then, $432 \div 4 = 108$



Check your understanding

Divide.

a.
$$525 \div 5$$

b.
$$685 \div 4$$

Notes for parents:

- Remind your child of the division algorithm : divide, multiply, subtract, compare and bring down.
- Remind your child of including the remainder as a part of the answer.

- ▶ The Partial Quotients Algorithm
- ▶ The Standard Division Algorithm
- REMEMBER
- UNDERSTAND
- O APPLY
- PROBLEM SOLVING
- III From the school book

1. Use the partial quotient algorithm to divide.





c. 590 ÷ 5





e. 925 ÷ 6



2. Complete to estimate the quotient.

68 ÷ 4

The dividend 68 is between 40 and 80, then $40 \div 4 = ------$, $80 \div 4 = -------$, then the quotient is between — and — —

457 ÷ 3

The dividend 457 is between 300 and 600, then $300 \div = =$,600 ÷ ____=

, then the quotient is between — and — —

87 ÷ 2

The dividend 87 is between — and — , then — \div 2 = — ,____÷2=____

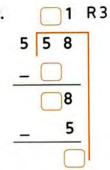
, then the quotient is between — and — —

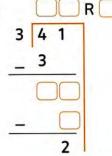
3. Estimate each quotient.

a.
$$632 \div 8$$

d.
$$495 \div 6$$

4. Copy and complete.





5. Solve the problems using the standard algorithm.

-Work area

[Alex. - Al-Agamy 23]

-Work area

h.
$$1,304 \div 4$$

-Work area

j. $3,650 \div 5$

k. $1,500 \div 5$

l. 2,385 ÷ 5

[Cairo - El-Marg 23]



6. A train has 784 seats for passengers. If there are 7 cars on the train and each car has the same number of seats ,how many passengers can sit in each car? Solve the problem using at least two different strategies.



- 7. Amgad has 84 stickers. He distributed them equally among 7 of his friends. What is the share of each one?
 [Cairo El-Nozha 23]
- 8. A runner covers 824 meters in 4 hours. Calculate the distance he covers in one hour.

(Ismaillia 23)

9. A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in microbuses.
Each microbus holds 9 people. How many microbuses will they need in order to get all of them to the pyramids?
[Aswan 23]

Challenge

Youssef divided a number between 55 and 60 by 5. The remainder was 4.
What number did Youssef divide?

Multiple Choice Questions

Choose the correct answer.

1. From the following

division form.

6 823 100 600 2 2 3 30

The dividend is 180 [Monofia - Berket El-Sabaa 23]

B. 823

- A. 6
- C. 137

A. 19

D. 1

- A. 130

2. 515 ÷ 5 =

- C. 13
 - **D**. 101
- 3. $357 \div 3 =$ [Cairo - El-Marg 23]

A. 144

4. 432 ÷ 3 =

- C. 1,044
- B. 14 D. 414

B. 103

[Cairo 23]

[Cairo 23]

C. 911

D. 119

B. 191

- 6. 366 ÷ 6 =
- (Giza 23)
- - A. 60

B. 61

C. 329

A. 319

5. 1,695 ÷ 5 =

B. 339 D. 393

C. 64

D. 71

- 7. $74 \div 4 = 18 R$
 - **A**. 0

B. 1

C. 2

D. 3

- 8. $36 \div 2 = 18 R$
 - A. 0

B. 1

C. 2

D. 3

- 1,836 ÷ 3 is closer to
 - A. 6

B. 60

C. 600

- **D.** 6,000
- **10.** Marwan divides $617 \div 5$ using the partial quotients algorithm. He uses 100 as the quotient on the first step. What is his next step?

- A. Multiply 100 by 617 and subtract the result from 5.
- B. Multiply 100 by 617 and add the result to 5.
- C. Multiply 100 by 5 and subtract the result from 617.
- D. Multiply 100 by 5 and add the result to 617.

Division and Multiplication



The relation between multiplication and division

There are 736 crayons wanted to be divided among boxes. Each box holds 4 crayons. How many boxes are needed?

Divide: 736 ÷ 4

Estimation can help decide whether an answer is reasonable. Division can help solve the problem.

Multiplication can help check the answer.



Known that

Multiplication and division by the same number are opposite operations or inverse operations. One operation undoes the other.

First Estimate the quotient

The dividend 736 is between 400 and 800

Note that

400 and 800 are multiples of 4

Then: $400 \div 4 = 100$ and $800 \div 4 = 200$

So, the quotient is between 100 and 200



Second Divide 736 ÷ 4

The number of boxes = $736 \div 4$ = 184 boxes

The answer is reasonable.

184 4736

Third Multiply to check

 $184 \times 4 = 736$

So, the needed boxes are 184 boxes.

Notes for parents:

Ask your child to tell you what is the relation between multiplication and division.

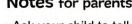
Partial strategy

+320

+400

736

184



Example 1

Write the division problem that matches the multiplication problem.

b.

C.

Solution [V]

a.
$$68 \div 2 = 34$$

b.
$$1,554 \div 3 = 518$$

c.
$$6,356 \div 7 = 908$$

Example 2

Write the division problem that matches the multiplication problem.

a. $14 \times 2 = 28$

b.
$$161 \times 5 = 805$$

c. $105 \times 7 = 735$

d.
$$320 \times 6 = 1,920$$

Solution [V]



a.
$$28 \div 2 = 14$$

b.
$$805 \div 5 = 161$$

c.
$$735 \div 7 = 105$$

d.
$$1,920 \div 6 = 320$$

check your understanding

Write the division problem that matches the multiplication problem.

$$\begin{array}{r}
 27 \\
 \times 6 \\
 \hline
 42 \\
 + 120 \\
 \hline
 162
\end{array}$$

Notes for parents:

· Ask your child to explain how can he/she uses the relation between multiplication and division to solve multiplication and division problems.

Division and Multiplication

REMEMBER

UNDERSTAND

O APPLY

- PROBLEM SOLVING
- From the school book

1. Write the division problem that matches the multiplication problem.

b.

d.

2. Write the division problem that matches the multiplication problem.

5

9

8

×

42

3. Place Value and the Quotient: First, circle the problems you think will have a quotient with fewer digits than the dividend. Then, estimate the quotient and solve each problem using the standard algorithm for division. Think about where to place the first digit in the quotient.

a. $834 \div 3$

The quotient is between — and ——

Solution:

b. $346 \div 5$

The quotient is between —— and —

Solution:

c. $562 \div 8$

The quotient is between — and —

Solution:

d. 1,266 ÷ 6

The quotient is between —— and —

Solution:

e. $1,429 \div 7$

The quotient is between —— and ——

Solution:

f. $4,590 \div 3$

The quotient is between —— and —

Solution:

4. Solve the following problems. You may use multiplication to check your answer.





Multiple Choice Questions

Choose the correct answer.

A. 78

B. 73

C. 83

[Giza - Abo El-Nomros 23]

D. 87

 $126 \times 3 = 378$ is

A. 378 - 3 = 126

B. 378 + 3 = 126

C. $378 \div 3 = 126$

D. $378 \times 3 = 126$

3. Which expression can be used to check the solution of the opposite division problem?

A. 28×9

B. 28×256

C. $28 \times 9 + 4$

D. $28 \times 256 + 4$

		2	8	R
9	2	5	6	1
-	1	8	V	
		7	6	
-		7	2	
			4	

4. In the problem 1,866 \div 6, the quotient is

between and

A. 100 and 200

B. 200 and 300

C. 300 and 400

D. 400 and 500

5. What is the value of ? in the

opposite division problem?

A. 73

B. 73 R1

C. 73 R 2

D. 73 R 3

6. $48 \div 7 =$

A. 6R4

B. 6R5

C. 6R6

D. 7R1

7. 320 ÷ 4 =

A. 80

B. 90

C. 80 R3

D. 90 R3

8. 2,014 ÷ 2 =

A. 17

B. 107

C. 1,007

D. 10,007

9. $2,748 \div 9 =$

A. 304 R 2

B. 304 R 3

C. 305 R 2

D. 305 R 3

Unit Seven Assessment



Choose the correct answer.

1. If 37 oranges are distributed equally among 5 plates, how many oranges will be left?

[Monofia - Sers El-Layyan 23]

A. 5

B. 2

C. 7

D. 0

2. Which partial product can be used to solve 35×6 ?

[Souhag 23]

 $A. [3 \times 6] \times [50 \times 6]$

B. $[30 \times 6] \times [50 \times 6]$

C. $[30 \times 6] + [5 \times 6]$

D. $[3 \times 6] + [5 \times 6]$

3. In the equation $6 \times b = 42$, then b = -

[Alex. 23]

[Cairo 23]

A. 8

B. 5

C. 6

D. 7

4. The quotient of dividing 922 by 3 is — and the remainder is 1. [Cairo - Heliopolis 23]

A. 37

B. 703

C. 307

D. 76

5. $505 \div 5 = -$

A. 100

B. 110

C. 101

D. 111

6. $125 \times 5 = -$

[Cairo 23]

A. 625

B. 130

C. 605

D. 505

7. If $50 \div 10 = 5$, then the divisor is —

[Behiera - Hosh Essa 23]

A. 40

B. 5

C. 10

D. 50

2. Complete the following.

- 1. 4×372=4×----+4×----+4×------
- **2.** 80 × 50 = _____
- 3. If $2,166 \div 6 = 361$, then the divisor is ______, the dividend is _____ and the quotient is ———
- **4.** × 30 = 2,700
- 5. $7 \times - = 7 \times 600 + 7 \times 50 + 7 \times 3$
- **6.** If $641 \times 7 = 4{,}487$, then $4{,}487 \div 7 =$

(Giza 23)

- 7. Hany placed 24 plants equally on 8 tables, then the number of plants on each table
- 8. 939 ÷ 3 = _____

3. Choose the correct answer.

- 1. ——— × 70 = 2,800
- **A**. 40
- **B.** 30

C. 50

D. 60

2. The area model represents 15×6

What number belongs in rectangle A?



- A. 15
- **B**. 20

C. 30

D. 45

- 3. 4,000 ÷ 5 2,000 ÷ 5
 - A. >

B. <

C. =

- 4. 45,000 ÷ = 9,000
- **A**. 5
- **B**. 50

C. 500

D. 5,000

5. 240 ÷ 6 = _____

(Cairo - El-Shrouk 23)

- **A**. 70
- **B**. 60

C. 50

- **D**. 40
- **6.** 52 pounds distributed equally among 6 friends, then the remainder is –

(Cairo 23)

- A. 2
- **B.** 4

C. 0

D. 5

7. 125 ÷ 5 = ----

(Souhag 23)

A. 5

B. 15

C. 25

D. 625

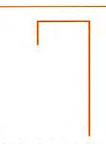
4. Answer the following.

1. Create an area model to solve the problem.



2. Use the partial quotient algorithm to divide.

$$7,425 \div 5$$



- 3. A city bus is 1,270 centimeters long. What is the length of 4 city buses?
- 4. A runner covers 4,488 meters in 6 hours with the same speed.

Calculate the distance he covers in one hour.

THEME TWO

Mathematical Operations and Algebraic Thinking

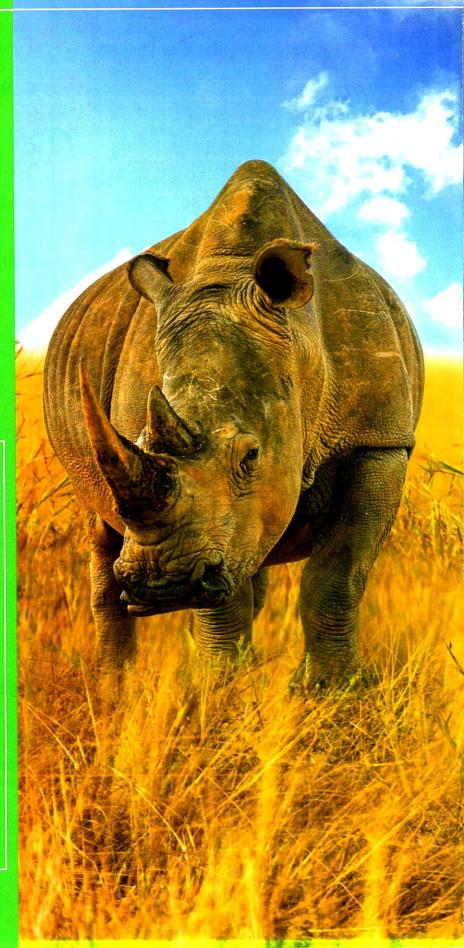
FIND

Order of Operations

▶ Concept 1:
Order of Operations

Fast Facts

- ▶ Rhino is one of the biggest animals in the world which can weigh a massive 2,500 kg That's the weight of 30 men I Sadly! it's estimated that there are only 29,000 rhinos left in the wild, compared to 500,000 at the beginning of the 20th century.
- ▶ Lion often known as the "King of the jungle".
 Lions usually live in groups of 10 or 15 animals. A female lion needs 5 kg of meat a day.
 A male needs 7 kg or more a day.
 How many kilograms do 3 females lion and 2 males need a day?



Concept 1

Order of Operations



	Lesson No.	Lesson Name	Learning Objectives
1	Lessons 1&2	Order of Operations	• Students will use the order of operations to solve equations with multiple operations.
A CONTRACTOR		The Order of Operations and Story Problems	 Students will use the order of operations to solve equations with multiple operations. Students will write and solve an equation to represent a multistep story problem.

- Order of Operations
- ► The Order of Operations and Story Problems

Learn 1 Order of operations

Find: $6-2 \div 2$

- Sara solved the problem by subtracting first and then dividing. What did she get?
- Bassem solved the problem by dividing first and then subtracting. What did he get?

Sara

Think: 6 - 2 = 4 $6-2 \div 2 = 4 \div 2$ =2

Bassem

Think: $2 \div 2 = 1$ $6-2 \div 2 = 6-1$ = 5



There seem to be two correct answers.

When solving problems with more than one operation, you need to know which operation to do first. A special set of rules, called the order of operations, can be used to solve problems with more than one operation.

Order of Operations

First, perform any operations in parentheses. Next, multiply and divide from left to right. Then, add and subtract from left to right.

So, the correct answer to $6-2 \div 2$ is 5 and Bassem solved the problem in a correct way.

Notes for parents:

· Ask your child which operation comes first when solving the problems : $12 \div (4 - 1)$ and $6 + 4 \times 5$.



Example 1

Follow the order of operations to find the value of each expression.

Solution [V]

c. $3 \times [4+6]$

 $= 3 \times 10$

= 30

a.
$$[8-2] \times 6$$

 $= 6 \times 6$
Do what is in the parentheses
first, next multiply.

b.
$$5+10 \div 5$$

 $= 5+2$
 $= 7$

There are no parentheses, so divide first. Then add.

There are no parentheses, so divide first. Then subtract.

There are no parentheses, so divide first. Then subtract.

There are no parentheses, so divide and multiply from

e. $[5+3] \div 2$

 $= 8 \div 2$

Do what is in the parentheses

first, next multiply.

$$f. 14 \div 7 \times 2$$
$$= 2 \times 2$$

= 4

left to right.

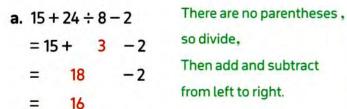
Example 2

Follow the order of operations to find the result.

a.
$$15 + 24 \div 8 - 2 =$$

b.
$$15 + 24 \div [8 - 2] = ------$$

Solution [V]



b.
$$15 + 24 \div [8 - 2]$$

$$= 15 + 24 \div 6$$

$$= 15 + 4$$

$$= 19$$
Do what is in the parentheses first, next divide. Then add.



Check your understanding

Use the order of operations to find the value of each expression.

c.
$$2 \times 5 - 8 \div 4$$

[•] Ask your child why the values of $15 + 24 \div 8 - 2$ and $15 + 24 \div (8 - 2)$ are different.

Learn 2 The order of operations and story problems









Look back and check

Example 3

Maged walked 20 kilometers every week for 3 weeks.

The next week, he walked 15 kilometers.

How many kilometers did he walk over those 4 weeks?

Solution [V



What he walked = $20 \times 3 + 15$

= 60 + 15 = 75 kilometers.

Example 4

Mohammed ran 8 kilometers on Saturday and twice that distance on Sunday. He ran 6 kilometers less on Monday than he did on Sundsay.

How many kilometers did he run on Monday?

Solution [V]



What he ran = $8 \times 2 - 6$

= 16 -6 = 10 kilometers.



Example 5

There were 86 people on the pitch. 9 of them were coaches, and the rest wanted to play football. If they wanted to form teams of 11,

how many teams could they form?

Solution [V]



Number of teams = $[86 - 9] \div 11$

= 77 \div 11 = 7 teams.





You should put parentheses to subtract first.





Check your understanding

Noha bought three books for 20 L.E. each. If she had 100 L.E., how much money was left with Noha?

Notes for parents:

· Ask your child to read each problem carefully and plan to solve each one, then ask him/her to look back to check his/her answer.

Exercise on lessons 1&2

Order of Operations

▶ The Order of Operations and Story Problems

-	-					
	w	м	Е	м	ĸ	L
•	n	•	ч	м.	•	u

UNDERSTANDAPPLY

PROBLEM SOLVING

From the school book

1. Write correct if the operations are listed in the correct order.

If not, write the correct order of operations.

a.
$$[9+3] \times 4$$

Multiply, add

c.
$$20 \div [10 - 6]$$

c. $20 \div [10 - 6]$ Subtract, divide

e.
$$32 - 8 \div 2$$

Divide, subtract

b.
$$2 \times [3 + 4]$$

Add, multiply-

d.
$$27 - 14 \div 2$$

Subtract, divide

f.
$$[23-11] \div 4 + 3$$

f. $[23-11] \div 4+2$ Divide, subtract, add

2. Follow the standard order of operations to solve.

c.
$$16 \div 4 - 2 =$$
 [Giza 23]

d.
$$5 \times 6 - 12 = -$$

f.
$$8 \times 2 + 13 = -$$

Solve the problems. Show your work.

a.
$$18 \times 2 + 8 - 3 = -$$

b.
$$73 - 60 + 15 \div 3 =$$

c.
$$4+4+5\times10=$$

[Cairo - El-Marg 23]

i.
$$25-3\times5+2=-$$

(Cairo 23)

4. I Find The Answer Solve each problem. Locate the correct answer and write the equation under it. If the answer is not listed, rewrite the problem under "Other".

$$2+4\times6$$
 $48 \div 4+9$
 $7+70 \div 10-2$

$$7 + 70 \div 10 - 2$$

 $49 - 7 \times 6 + 4$
 $8 \times 3 + 6 + 2$

$$24 - 8 \div 4 + 6$$

 $36 \div 9 + 4$
 $99 - 10 \times 9 + 7$
 $12 - 72 \div 12 + 2$
 $80 \div 10 + 6 - 3$

$$15-7+2+6$$

 $8 \times 2 + 24-12$
 $24 \times 36 \div 6 + 2$
 $40-7 \times 5 + 2$

 $15 \div 5 + 4 + 1$

8

11

16

28

32

Other

5. Which Does Not Belong? Solve the problems. Then, think about which problem does not belong in the set. Highlight or circle the problem you think does not belong and explain your thinking.

6. Talk About Math

Explain why the values of $8 + 6 \div 2$ and $[8 + 6] \div 2$ are different.

What is the value of each expression?

7. Who is Correct?

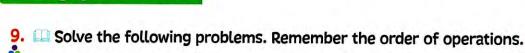
Saleem and Sarah both solved the problem $74 - 61 + 8 \times 5$. Saleem says the answer is 105 and Sarah says the answer is 53. Who is correct? How do you know? Help the person who is not correct realize his/her mistake.

8. Wumber Talk

Solve the problems. Then, rewrite each problem more efficiently.

a.
$$67 + 67 + 67 + 67 + 67 - 15 = -$$

Story problems



a. Abdullah loves collecting stamps. He received 246 stamps for his birthday. He kept 25 of the stamps and now he wants to give the rest to 6 of his friends. How many stamps will each friend get if they share them equally?



- **b.** Maha walked 14 kilometers every day for 2 weeks. The next week, she walked 56 kilometers. How many kilometers did she walk over those 3 weeks?
- c. Ashraf has to take the bus to work. It takes 27 minutes to get to the bus stop near his job. Then, he has to walk for 12 minutes from the bus stop to his place of work. How many minutes does Ashraf spend going to work during a 5-day week?



- d. A group of tourists are taking a tour of Alexandria. There are 172 tourists and 8 tour guides in the group. They want to travel to the pyramids in microbuses. Each microbus fits 9 people. How many microbuses will they need in order to get everyone to the pyramids?
- e. Nashwa wants to bake berry muffins. Each muffin will have 6 berries in it. She buys 198 berries from the store. On the way home, she eats 17 of the berries. How many muffins can she make with the berries she has left?
- 10. \square Writing My Own Problem Write a story problem that can be represented by $(50 36) \div 4$.

Multiple Choice Questions

Choose the correct answer.

[El Monofia - Sers El-Layyan 23]

A. 14

B. 6

C. 1

D. 16

2. $18 \div 3 + 4 - 2 = -$

[Cairo - El-Nozha 23]

A. 8

B. 16

C. 2

D. 0

(Souhag 23)

4. $2+6\times4-8=$

[Cairo - Al-Khalifa and Al-Mokattam 23]

- A. 41
- **B.** 27

C. 23

D. 14

A. 8

B. 10

C. 16

D. 18

5.
$$9 + 2 \times (15 \div 5) = -$$

(Giza 23)

A. 15

B. 21

C. 11

D. 18

6. 24 ÷ [4 – 1] – 2 = –

[Souhag 23]

A. 6

B. 10

C. 24

D. 48

Which is the first step in evaluating

 $18 - 15 + 3 \times 8 - 2$?

(Ismailia 23)

- **A.** 18 15
- **B.** 15 + 3
- C. 3×8
- **D.** 8-2

8. Which of the following = 6? [Giza 23]

- **A.** $3 \times 1 + 2$ **B.** $12 + 6 \div 3$
- C. $18-3\times4$ D. $24\div6+2$
- 9. Which of the following = 24? [Cairo 23]

- **A.** $3 \times [3 + 5]$
- **B.** $3 \times 3 + 5$
- **C.** $3 + 3 \times 5$
- **D.** $[3+3] \times 5$
- **10.** 5+5+5+5+5-12=-
 - **A.** $5 \times 6 12$
- B. 20 12
- **C.** $5 \times 5 12$ **D.** $5 \times 5 + 12$



Unit Eight Assessment



1. Choose the correct answer.

[El-Monofia - Quesna 23]

7. Noha walked 10 kilometers every day for 2 weeks. The next week, she walked 60 kilometers.

How many kilometers did she walk over those 3 weeks?

2. Complete the following.

7.
$$40 \div 8 - 3 =$$
 [Giza 23]

8.
$$15 + 20 \div 4 =$$
 [Giza 23]

3. Choose the correct answer.

2. $2+5\times6=-$

A. 42

B. 32

C. 16

D. 60

3. $5+2\times3=-$

(Giza 23)

[El-Beheira 23]

A. 10

B. 6

C. 11

D. 8

4. 5×4+6=

A. 26

B. 25

C. 50

D. 34

5. 20 ÷ 4 – 3 = —

A. 20

B. 6

C. 2

D. 9

[Alex. - El-Montazah 23]

6. 48 - 16 - 6 = -

A. 38

B. 26

C. 32

D. 42

7. $[8+12] \div 4 = --$

A. 80

B. 11

C. 5

D. 20

4. Answer the following.

1. Solve using the order of operations. Show your steps.

a. $13 + 36 \div 4$

b. $3 \times [6 - 3]$

2. Solve using the order of operations. Show your work.

a. $67 + 3 - 4 \times 5$

b. $7 + [12 - 6] \div 2$

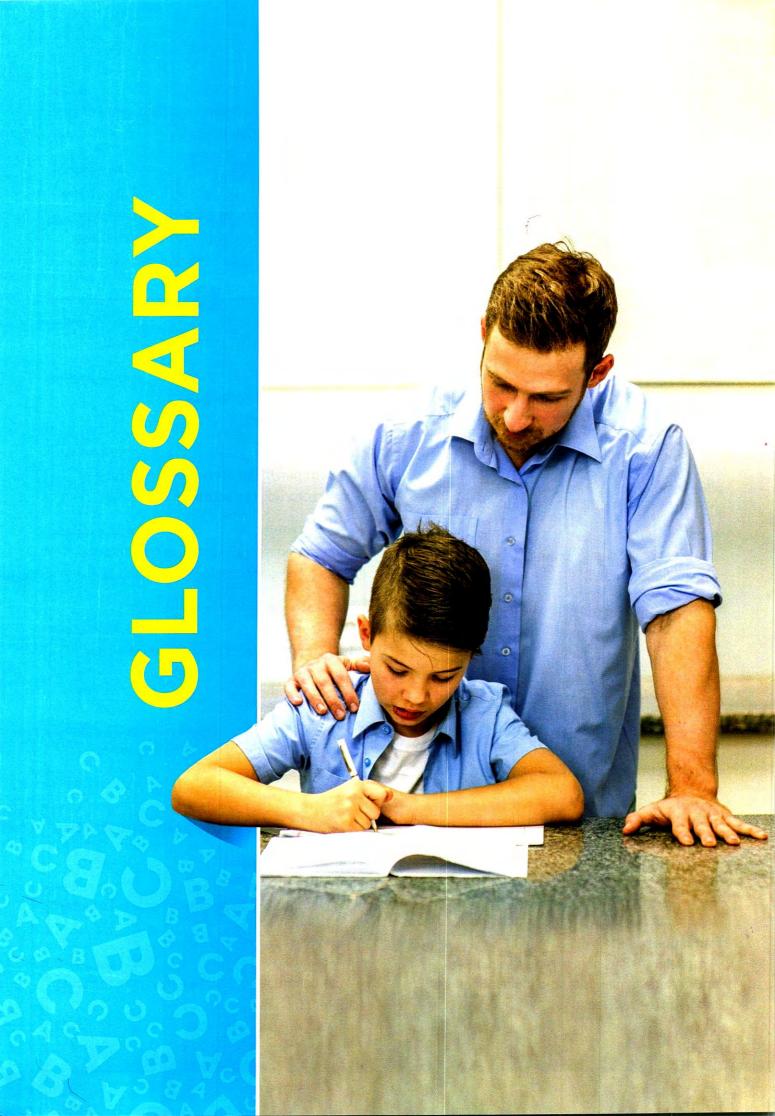
3. Mona walked 5 km. every day for 2 weeks. The next week, she walked 60 km.

How many kilometers did she walk over those 3 weeks?

4. Edward has to take the bus to work. It takes 25 minutes to get to the bus stop near his

job. Then, he has to walk for 15 minutes from the bus stop to his place of work. How many minutes does Edward spend going to work during a 5-day week?





A

a.m.

صباحًا [قبل الظهر]

A time between 12:00 midnight and 12:00 noon.

add

يجمع

To combine or join together; put together two or more quantities.

addend

عدد مُضاف

Any number being added. In the equation 6 + 8 = 14, six and eight are both addends, 14 is the sum.

additive comparison مقارنة باستخدام عملية الجمع Problems that ask how much more (or less) one amount is than another.

خاصية المحايد الجمعى Hen you add zero to a number, the sum is that same number.

algorithm

خوارزمية

A step-by-step method for computing.

area مساحة

The measure, in square units, of the inside of a plane figure.

area model

نموذج مساحة المستطيل

A model of multiplication that shows each place value product.

مصفوفة

An arrangement of objects in equal rows.

Associative Property of Addition

خاصية الدمج في عملية الجمع

Changing the grouping of three or more addends does not change the sum.

Associative Property of Multiplication

خاصية الدمج في عملية الضرب

نموذج شريطي

Changing the grouping of three or more factors does not change the product.

A model that uses bars to represent known and unknown quantities and the relationship between these quantities.

base

قاعدة

Any side of a plane figure. Usually thought of as a side where the figure "sits".

Base Ten numerals

أرقام نظام العد العشرى

Any of the symbols 0,1,2,3,4,5,6,7,8 or 9. The symbols can represent any amount based on a place value system of grouping by tens (also known as digits).

capacity

سعة

The amount of liquid a container can hold.

centimeter (cm)

سنتيمتر (سم

A metric unit of length equal to $\left(\frac{1}{100}\right)$ of a meter.

common factor

عامل مشترك

Any common factor of two or more numbers. Six is a common factor of both 12 and 24.

common multiple

مضاعف مشترك

Any common multiple of two or more numbers. Six is a common multiple of both 2 and 3.

Commutative Property of Addition

خاصية الإبدال في عملية الجمع

Changing the order of the addends does not change the sum.

Commutative Property of Multiplication

خاصية الإبدال في عملية الضرب

Changing the order of the factors does not change the product.

compare

يقارن

To decide if one number is greater than, less than, or equal to.

compose

يكوِّن

To put together smaller numbers to make larger numbers.

Composite number

عدد غير أولى

A number greater than 0 that has more than two different factors

bar model

Customary system

نظام القياس المتعارف عليه

A system of measurement used in the United States. The system includes units for measuring length, capacity, and weight. Nearly everyone else uses the metric system.

D

day

يوم

The length of time it takes the Earth to make a complete rotation. 24 hours = 1 day.

decimeter [dm]

ديسيمتر [ديسم]

A metric unit of length. 1 decimeter = 0.1 meter; 10 decimeters = 1 meter. A hand span is about 1 decimeter.

decompose

بحلل

To separate number into two or more parts.

determine

يعيِّن

To decide or settle upon, figure out.

difference

فرق

The amount that remains after one quantity is subtracted from another. The answer in a subtraction problem.

digit

رقم

Any of the symbols 0,1,2,3,4,5,6,7,8 or 9. [Also known as Base Ten numerals.]

display

يعرض

To show, exhibit or demonstrate.

Distributive Property

خاصية التوزيع

When one of the factors of a product is a sum, multiplying each addend before adding does not change the product.

divide

يقسم

To separate into equal groups and find the number in each group or the number of groups. 56 split into 8 equal groups equals seven in each group, $56 \div 8 = 7$

dividend

مقسوم

A number that is divided by another number. 56 is the dividend in the above example.

divisible

قابل للقسمة

A number is divisible by another number if the quotient is a counting number without a remainder.

divisor

مقسوم عليه

The number by which another number is divided. 8 is the divisor in $56 \div 8 = 7$

elapsed time

وقت منقض

The amount of time that has passed (also known as time interval). Six hours elapse between 8:00 am and 2:00 pm.

equal

يساوي

Having the same value. 2 feet = 24 inches.

equation

معادلة

A mathematical sentence with an equal sign. The amount on one side of the equal sign has the same value as the amount on the other side. 4+3=7

estimate

ئقڈر

To find a number close to an exact amount, an estimate tells about how much or about how many.

expanded form

صبغة ممتدة

A way to write numbers that shows the place value of each digit. 263 = 200 + 60 + 3

fact family

مجموعة حقائق رياضية ذات صلة

A group of related facts that use the same numbers [also known as related facts]. Fact family for 3, 5, 15: $3 \times 5 = 15$; $15 \div 5 = 3$; $5 \times 3 = 15$; $15 \div 3 = 5$

factors

عوامل

The whole numbers that are multiplied to get a product. $6 \times 7 = 42$ [6 and 7 are factors.]

factor pairs

أزواج عوامل العدد

A set of two whole numbers that when multiplied will result in a given product. $2 \times 3 = 6, 1 \times 6 = 6$. The factor pairs for 6 are : 2 and 3,1 and 6

A rule that is written as an equation.

 $A = l \times w$

gram [g] جرام [جم]

The standard unit of mass in the metric system. 1,000 grams = 1 kilogram.

The mass of a paperclip is about 1 gram.

greater than (>)

أكبر من

أفقى

Used to compare two numbers when the first number is larger than the second number.

horizontal

Parallel to the horizon. Horizontal lines go from left to right or right to left.

ساعة hour [hr]

A unit of time. 1 hour = 60 minutes;

24 hours = 1 day.

مئات Hundreds

The value of a digit that is the third position from the right when describing whole number place value.

identify

يحدد

Recognize or distinguish, figure out what it is, name it.

Identity Property of Multiplication

خاصية المحايد الضربي

The property that states that the product of any number and 1 is that number : $n \times 1 = n$

يفسر interpret

To explain or tell the meaning of something.

inverse operations

عمليات عكسية

Operations that undo each other. Multiplication and division are inverse operations.

 $8 \times 5 = 40$ and $40 \div 5 = 8$

justify

يبرر

To show or prove to be right or reasonable.

kilogram [kg]

كيلوجرام (كجم)

A metric unit of mass equal to 1,000 grams. 1 kilogram = about 2,2 pounds.

kilometer (km)

كيلومتر [كم]

A metric unit of length equal to 1,000 meters.

length

طول

How long something is. The distance from one point to another. Length is measured in units such as centimeters, meters and kilometers. One dimension of a 2-dimensional or 3-dimensional figure.

less than [<]

أقل من

Used to compare two numbers when the first number is smaller than the second number.

line plot

مخطط التمثيل بالنقاط

A diagram showing frequency of data on a number line.

لتر liter [L]

The basic unit of capacity in the metric system. 1 liter = 1,000 milliliters.

M

mass

كتلة

The amount of matter in an object, usually measured by comparing with an object of known mass. While gravity influences weight, it does not affect mass.

حساب عقلی mental math or mental calculation

Calculations that are done in a student's head without pencil and paper, calculators or other aids.

meter [m]

متر [م]

A standard unit of length in the metric system.

metric system

النظام المتري

A system of measurement based on tens. The basic unit of capacity is the liter. The basic unit of length is the meter. The basic unit of mass is the gram.

milliliter (mL)

ملليلتر [مل]

A metric unit of capacity.

1,000 milliliters = 1 liter.

This holds about 10 drops or 1 milliliter.

millimeter

ملليمتر [مم]

A metric unit of length.

1,000 millimeters = 1 meter.

minute [min]

دقيقة

A unit used to measure a short amount of time. There are 60 minutes in one hour.

model or visual model

نموذج أو نموذج مرئي A picture or representation of a solution, a number or a concept.

month

شهر

A length of time equal to 28, 30 or 31 days. 12 months = 1 year.

multidigit

متعدد الأرقام

Having more than one digit (number). Seven (7) is a single digit, where as seventy-two (72) and seven hundred forty-two (742) are multidigit numbers.

multiple

A product of a given whole number and any other whole number. 12 is a multiple of 3 and 4 because $3 \times 4 = 12$

multiplicative comparison

مقارنة باستخدام عملية الضرب

A way to compare quantities using multiplication, as in "This tree is 3 times shorter than that tree".

multiply

The operation of repeated addition of the same number. $3 \times 5 = 5 + 5 + 5$

number

The quantity we associate with a numeral. Often used interchangeably with digit and numeral.

number line

خط الأعداد

A diagram that represents numbers as points on

آحاد

The value of a digit that is farthest to the right when describing whole number place value.

order

Ones

ترتيب

A sequence or arrangement of things.

Order of Operations

ترتيب العمليات

A set of rules that tells the order in which to compute.

- 1. Do operations in parentheses.
- 2. Multiply and divide in order from left to right.
- 3. Add and subtract in order from left to right.

p.m.

مساءً [بعد الظهر]

The time between 12:00 noon and 12:00 midnight.

parentheses

أقواس

Used in mathematics as grouping symbols for operations. When simplifying an expression, the operations within the parentheses are performed first.

partial product

ناتج عملية الضرب بالتجزئة

A method of multiplying in which the value of each digit in a factor is multiplied separately, and then the partial products are added together.

partial quotient

ناتج عملية القسمة بالتجزئة

A method of dividing in which multiples of the divisor are subtracted from the dividend, and then the partial quotients are added together.

pattern

نمط

A repeating or growing sequence or design. An ordered set of numbers or shapes arranged according to a rule.

Glossary

perimeter محيط

The distance around the outside of a figure.

فترة period

In a large number, periods are groups of 3 digits separated by commas or by spaces.

قيمة مكانية place value

The value of the place of a digit in a number.

عدد أولى prime number

A whole number greater than 1 that has exactly two different factors, 1 and itself.

ناتج الضرب product

The answer to a multiplication problem. In $6 \times 7 = 42,42$ is the product/answer.

duotient خارج القسمة

The answer to a division problem.

reasonableness

معقولية

An answer that is based on good number sense.

رك recognize

identify (someone or something) from having encountered them before; know again, remember.

rectangle مستطيل

A quadrilateral with two pairs of congruent, parallel sides and four equal angles.

regroup إعادة تسمية

To rearrange numbers into groups of 10 when performing mathematical operations.

related facts [fact family] حقائق ذات صلة

Related addition and subtraction facts or related multiplication and division facts. Related facts for 3, 5, 8:3 + 5 = 8; 8 - 5 = 3;

5 + 3 = 8; 8 - 3 = 5 (also known as fact family).

remainder باقى القسمة

The amount left over when one number is divided by another.

repeated subtraction

طرح متكرر

Subtracting equal groups to find the total amount of groups (also called division).

represent

يعرض

To show or model.

round a whole number

تقريب عدد صحيح

To identify the nearest Ten, Hundred, Thousand, (and so on) and rename a number so it is easier to mentally add, subtract, multiply, or divide.

rule

something that happens every time [for example: 2,5,8,11 ... the rule is +3].

second (sec)

ثانىة

A unit used to measure a very short amount of time. There are 60 seconds in one minute.

sequence

A set of numbers arranged in a special order or pattern.

رسم تقریبی سریع sketch

A quick, rough drawing.

specify عیّن

identify clearly and definitely.

مربع square

A parallelogram with four equal angles and four equal sides.

square unit

وحدة مربعة

A unit, such as square centimeter, used to measure area.

standard form

صبغة قياسية

A common or usual way of writing a number using digits. 12,376 is in standard form.

يطرح subtract

An operation that gives the difference between two numbers. Subtraction can be used to compare two numbers, or to find out how much is left after some is taken away.

sum

مجموع

The answer to an addition problem.



عشرات amul

The value of a digit that is the second position from the right when describing whole number place value.

Thousands آلاف

The value of a digit that is the fourth position from the right when describing whole number place value.

فترة زمنية فترة زمنية

A duration of a segment of time (also known as elapsed time).

dن do

A customary unit of weight. 1 ton [T] = 2,000 pounds. A metric ton, or tonne [t] is a unit of mass equal to 1,000 kilograms (about 2,200 pounds).

two-dimensional

ثنائي الأبعاد

Having length and width.



variable

متغير

A letter or symbol that represents a number. $5 \times b = 10$, b is a variable worth 2.

رأسى vertical

Perpendicular to the horizon. Vertical lines go up and down.



week

سبوع

There are seven days in a week: Sunday, Monday, Tuesday, Wednesday, Thursday, Friday, and Saturday.

weight

وزن

The measure of how heavy something is.

Whole کامل

All of an object, a group of objects, shape or quantity.

whole numbers

أعداد صحيحة

The numbers 0,1,2,3 and so on, without fractions or decimals.

عرض width

One dimension of a 2-dimensional or 3-dimensional figure.

A way of using words to write a number. The word form of 12,345 is twelve thousand, three hundred forty-five.



year

عام

The length of time it takes the Earth to revolve around the sun. 12 months = 1 year; 365 days = 1 year; 366 days = 1 leap year.



Zero Property of Multiplication

خاصية الضرب في صفر

The product of any number and zero is zero $8 \times 0 = 0$



Mathematics

By a group of supervisors

FREE PART 1 Step by Step Revision



on UNIT 1

Cumulative Assessment

1

Till lessons (2 & 3) unit 1

1. Choose the correct answer.

- a. The digit ______ is in the Ten millions place in the number 346,870,251
 - **A**. 8
- **B**. 0

C. 5

- D. 4
- b. The value of the digit 3 in the number 23,694,501 is _____
 - **A.** 3,000
- **B.** 30,000
- **C.** 300,000
- **D.** 3,000,000
- c. The value of the digit 4 in the number 42,780 is 10 times. the value of the digit 4 in which number?
 - **A**. 146,703
- **B**. 426,135
- C. 34,651
- **D.** 10,400

- **d.** 10,000 + 7,000 + 400 + 60 + 3 < _____
 - A. 16,643
- **B.** 71,346
- C. 17,364
- **D.** 15,999

2. Complete.

- a. The value of the digit 0 in the number 7,056,219 is
- **b.** The number of hundreds in one million = _____
- c. The place value of the digit 0 in the number 706,421,573 is _____
- d. 58,000 Thousands = _____ Millions.

3. Match.

- a. 4 milliards , 683 millions 17 thousands, 918
- b. The digit 5 is in the hundred millions place in the number
- c. 90,050 thousands
- d. 386 millions

- 1. 38,600 ten thousands
- 2. 90,050,000
- **3**. 4,683,017,918
- **4.** 7,524,800,673

2

Till lessons (5 & 6) unit 1

1. Choose the correct answer.

- **a.** 5,000,000 + 40,000 + 8,000 + 700 + 20 + 3 =
 - **A**. 5,408,723
- **B.** 5,048,723
- **C.** 5,084,723
- D. 5,048,273

- **b.** 4,800,000 = _____ Thousands
 - **A.** 48
- **B.** 480
- C. 4,800
- **D**. 480,000

- c. The number _____ has 9 digits.
 - **A.** 36,423,100
- B. 8,614,000
- C. 125,000,694
- **D.** 167,282
- d. is the compose of $(6 \times 100,000) + (5 \times 10,000) + (3 \times 100) + (4 \times 10)$
 - **A**. 650,340
- **B.** 605,340
- C. 650,304
- **D**. 650,034

2. Complete.

- a. 34 millions, 905 thousands, 421 in standard form is
- **b.** The value of 7 in the number 720,358,014 is _____
- c. The expanded form of 5,614,003 is _____+ ____+ ____+
 - + _____
- d. 450 thousands = _____

3. Complete the following.

Composed:

Decomposed: + + + $(2 \times 100,000) + (4 \times 1,000) + (7 \times 10) + (5 \times 1)$

Millions			Th	ousan	ds	-	Ones	
Н	Т	0	Н	Т	0	Н	Т	0
6	1	8	-	0		3		

	Cultulative Assessment	Till lesson o unit 1
1. Compare	e. Write (< , > or =).	
a. 43,60	0,287 43 Millions ,700 thousand	ds and 286
b. 1,534	973 900,000 + 90,000 + 4,000 -	+300+6
c. Sevei	n millions, two hundred forty six thou	sands 70,000,000
d . (5×1	0,000,000] + [7 × 1,000,000] + [4 × 100	0,000) + (2 × 1,000) + (6 × 100) 1 mil
2. Choose	the correct answer.	
a. 2,800	thousands >	
Δ 21	RNN hundreds B	28 000 hundreds

D. Milliards

d. The missing digit such that 8,000 + 100 + 80 + 5 > 8, 85 is

B. Ten Millions

A. 0

A. 10

C. 28 millions

A. Millions

B. 1

c. The number 42,365,978 has digits.

B. 9

b. The place value of 6 in 6,482,759,310 is —

C. 2

C. 8

D. 2 milliards

C. Hundred Thousands

- **D.** 3
- 3. Write a number that is less in the ten thousands place than 53,782.
- 4. Create a number that is smaller in the Ten Million place than 745,864,251
- 5. Create a number that is greater in the thousands place than six Milliard, Six million, eight thousand, eight hundred.



Till lesson 9 unit 1

1. Choose the correct answer.

a. Which choice shows the numbers in an ascending order?

A. 1. 700 + 50 + 7

- 2. Seven hundred seventy-five
- 3. 765
- 4. Eight hundred five

C. 1. 572

- 2.500 + 80 + 1
- 3. Five hundred seventy-two
- 4.600 + 70 + 4

B. 1. 780

- 2. Eight hundred forty
- 3.800 + 50 + 1
- 4. One thousand

D. 1. Six hundred five

- 2.600 + 50
- 3. 674
- 4. Six hundred nine
- b. Which digit makes the number sentence true? 3 million, 521 thousand, 432 < 3, 21,432
 - A. 3
- B. 4

C. 5

D. 6

- c. Which number sentence is true?
 - **A.** 74,562 < 9,000 + 800 + 50 + 6
- В.
- B. 300,000 + 40 < 700,000 + 20

C. million < 792,561

- **D.** Four hundred eighty two > 7 thousand,914
- d. In the number 11,111, how many times is the digit in the Thousands place as the digit in the Tens place?
 - **A.** 10
- **B.** 100
- C. 1,000
- **D**. 10,000

2. Write each of the following numbers in standard form and arrange in an ascending order.

- [5 × 1,000,000,000] + [2 × 10,000,000]
 - $+ [5 \times 1,000] + [1 \times 10] + [8 \times 1]$
- Five Milliard, three million, fifty three
- 5,000,000,000 + 4,000,000 + 6,000 + 9
- 525 million, 508

Standard form Ascendingly

3. Complete.

- **a.** 5,007 thousands = _____
- b. Six milliard, four hundred two million, twenty-eight in standard form is _____
- c. The value of the digit 4 in the number 3,456,261,852 is
- d. _____ is 100 times as many as fifty thousand.

Cumu	lative	Asset	ssmei	٦t

Till lesson 11 unit 1

- 1. Draw the number line, record the midpoint, then round each of the following numbers.
 - a. 574,698 (to the nearest Ten Thousand) b. 12,983 (to the nearest Hundred)
- Use place value strategy to round each of the following.

a. $4,865 \approx$ [to the nearest 100]

b. $7,985,462 \approx$ [to the nearest Hundred Thousand]

c. 99,999,862 ≈ __ ____ (to the nearest Million)

d. $54,321,782 \approx$ [to the nearest Ten Thousand]

Choose the correct answer.

a. 78,562

$$9.000 + 800 + 50 + 4$$

A. >

b. 100,000 is ___ ____ times 1,000

A. 10

- **B.** 100
- **C.** 1,000
- **D.** 10,000
- c. Which number round to 700,000 when rounded to the nearest Hundred Thousand?

A. 706,999

B. 752,384

C. 799,999

D. 789,653

d. 870 Hundreds = ______Tens.

A. 87

B. 8,700

C. 87,000

D. 870,000

- 4. Write 5 different numbers if rounded to the nearest hundred the result is 784,500
- 5. Complete.

Composed: 7,453,361,214

Decomposed:

Till lesson 1 unit 2

Choose the correct answer.

a. Fady worte 994 + 0 = 994 using the _____ property.

A. additive identity

B. commutative

C. associative

b. 70,000,000 + 8,000 + 50 + 1 Seven million, twenty.

A. >

B. <

C. =

c. Which number round to 3,500,000 when rounded to the nearest Hundred Thousand?

A. 3,562,531

B. 3,426,217

C. 3,524,261

D. 3,584,212

d. The value of the digit 6 in the number 63,785 is 100 times the value of the digit 6 in which number?

A. 46,521

B. 94.682

C. 241,261

D. 432.216

2. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. 35 - 14 = 14 - 35

b. The place value of the digit 4 in the number 5,862,431,811 is Hundred Thousand

c. The compose of the number $(7 \times 10,000) + (2 \times 1,000) + (4 \times 100)$ is 72,400

d. The smallest 6- different digit number is 10,234

Solve each problem and name the property used.

a. 17 + 8 + 3

b. 35 + 14 + 15 + 36

4. Round 773,329

a. to the nearest ten

b. to the nearest ten thousand



Till lesson 3 unit 2

1. Choose the correct answer.

b. Which of these statements used only commutative property of addition to find 17 + 48 + 13?

B.
$$17 + 13 + 48$$

C.
$$17 + [13 + 48]$$

D.
$$[17 + 13] + 48$$

2. Estimate using rounding to the nearest 100. Find the exact answer.

3. Use the properties of addition to find the sum of 142 + 55 + 18 + 45

4. In a week 3,573 tourists visited Giza pyramids and in the next week 4,230 tourists visited them.

Find the number of tourists in the two weeks? (Round to the nearest Hundred)

5. Arrange in a descending order, using the forms which the numbers are written.

- $(3 \times 1,000,000,000) + (5 \times 10,000,000) + (4 \times 10)$
- Three milliard, five hundred million, fourteen

• 3,000,786,562

• 3,000,000,000 + 20,000,000 + 400

The order is:

Till lessons (4 & 5) unit 2

1. a. Solve 852 – 465 using counting down.

Using number line with decomposing strategy.

b. Solve 5,425 - 1,373 using counting on.

Using number line with decomposing strategy.

 $\boldsymbol{c.}\,$ Solve the following problems , then round to the nearest Ten to check the reasonableness of your answer.

1. 7,356

2,547

+ 2,816

3,785

2. Write (< , > or =).

a. 7,856,432

7,000,000 + 80,000 + 6,000 + 900 + 80 + 9

- **b**. 842 + 237
- 3,225 2,784

- c. 7,423 + 8,612
- 22,520 7,250
- d. 370 Hundreds

3,700 Tens

- 3. A factory produced 2,879 toys in one week. The next week, the factory produced 3,267 toys. Find the difference between the production in the two weeks.
- 4. Subtract.

a. 432 - 395

b. 276 - 194



Till lesson 6 unit 2

1. Solving equations with variable. Create a bar model.

a.
$$s = 74,252 = 23,402$$

Bar model:

Solution:

b.
$$b + 4,261 = 21,253$$

Bar model:

Solution:

c.
$$47,261 - m = 31,422$$

Bar model:

Solution:

d	7.5	261	_	ν	_	50	1.29	į
a.	45.	Z01	+	ĸ	_	DZ.	444	5

Bar model:

Solution:

Choose the correct answer.

a. The value of the digit 3 in the number 7,516,234,981 is -

- **A.** 3,000,000,000 **B.** 300,000
- **C**. 30,000
- **D**. 3000

b.
$$[241 + 1,614] + 7,426 = [$$

- A. 241
- **B.** 1,855
- **C.** 7,426
- **D.** 1,000

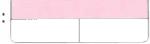
c. $[8 \times 1,000,000] + [7 \times 10,000] + [5 \times 100] + [6 \times 10]$ in standard form is -

- **A.** 87,560
- B. 8,070,560
- **C**. 8,700,560
- **D.** 870,560

- **d.** If x = 8 = 13, then x = -
 - A. 5
- B. 4
- C. 21
- **D**. 22

3. Colony A has 32, 425 male ants, if the colony has 74,319 ants, how many ants are female?

Bar model:



Solution:

4. Use the properties of addition to find the sum.

- a. 75 + 87 + 25
- **b.** 712 + 59 + 28 + 111

10

Till lesson 7 unit 2

1. Complete the following.

- b. The value of the digit 4 in the number 4,851,061,052 is
- c. 2,785,629,142 in expanded form is _____

f. In the bar model
$$35$$
 x , $x =$

- 2. Port Said has a population of 782,180, if South Sinai has a population of 111,835 and North Sinai has a population of 450,528, how many more people do Port Said than South Sinai and North Sinai have combined?
- 3. A library sold 5,325 books in the first month, 9,712 books in the second month. If the library had 20,000 books. How many books are left?
- 4. Estimate using rounding to the nearest 100. Find the exact answer.

5. Write (< , > or =).

a.
$$9,000,000 + 70,000 + 50$$
 nine million, seven thousand, fifty-nine.

on UNIT 3

Cumulative Assessment

Till lesson 1 unit 3

1. Convert the lengths into the units on the bar models.

a.

783	cm
m	cm

b.

7,48	6 m
km	m

C.

	m
25 km	423 m

2. Complete.

a.
$$7 \text{ m} = ----- \text{mm}$$
.

c.
$$7 \text{ km}$$
, $50 \text{ m} =$ _____m

c.
$$7 \text{ km}$$
, $50 \text{ m} = ----\text{m}$ d. $8,762 \text{ m} = ----\text{km}$, $----\text{m}$

Choose the correct answer.

b.
$$70,000,000 + 5,000 + 700 + 40 + 3$$
 in standard form is

c. If
$$x + 7 = 20$$
, then $x = _____$

e.
$$9 \text{ km}$$
, $9 \text{ m} =$ _____m

4. Find the result.

Till lesson 2 unit 3

1. Convert the masses into the units on the bar models.

a.

8,78	32 g
kg	— g

b.

29,4	19 g
kg	g

C.

	g
52 kg	34 g

2. Complete.

a.
$$76 \, \text{cm} =$$

b.
$$8,875 q =$$

b.
$$8,875 g = 6000 \text{ kg}$$

c. The smallest 7-digit number formed from 7,0,3,9,8,2,4 is

d. $37,852 \approx$ [Round to the nearest thousand]

e. $7 \, \text{cm} \cdot 4 \, \text{mm} =$

mm

f. 2 km = _____mm

3. A car covers 2 km in one minute, what is the distance the car covers for 8 minutes in kilometers and in meters?

4. List 21,000 g , 17 kg , 23,000 g , 25 kg from least to greatest

5. Write (< , > or =).

- a. 37.865

three hundred thousand, eight hundred forty-five

b. 5 km, 30 m



c. 700 g



17 kg

d. 19 dm



89 cm

13

Till lesson 3 unit 3

1. Find each missing number.

c. ____mL =
$$7L,15mL$$

e.
$$3,729 g = 800 \text{ kg}$$

2. Choose the correct answer.

a. In which number does the 5 have a value of fifty thousand?

- A. 3,765,432
- **B**. 7,452,173
- **C**. 8,521,641
- **D.** 5,421,698

b. Which of the following is the least capacity?

- **A.** 7,000 mL
- **B.** 15 L
- C. 2,500 mL
- **D.** 4,200 mL

c. The place value of the digit 6 in the number 3,562,147,209

- A. ten million
- B. Million
- **C**. 60,000,000
- **D.** 6,000,000

d. 7,800 g 24 kg

- A. >
- B. <

C. =

e. The compose to $(4 \times 100,000) + [2 \times 10,000] + [7 \times 100] + [2 \times 1]$ is ______

- **A.** 4,272
- **B**. 420,720
- **C**. 420,702
- D. 42,702

3. A car was filled with 25 liters, 400 millileters. At the end of the day there were 10 liters 230 milliliters left in the tank. How much petrol was used?

4. Use properties of addition to find the result and name the property you used.

$$18 + 35 + 82 + 15$$

5. Write four numbers that could be rounded to 340,000 when rounded to the nearest ten thousand.

Till lessons (5 & 6) unit 3

1. Write the time in two ways.

a.



b.



C.



d.



2. Complete.

b.
$$11 \, \text{kg}$$
, $400 \, \text{g} + 3 \, \text{kg}$, $250 \, \text{g} =$ ______ kg, _____ g

3. Use the properties of addition to find the answer.

$$32 + 15 + 8$$

4. Estimate using rounding to the nearest 1,000. Find the exact answer.

5. A television cartoon movie begins at 7:15 P.M. and ends at 8:10 P.M. Find the elapsed time.

15

Till lesson 7 unit 3

1. Complete the bar models.

a.

73,785 m		
— km	– m	

d.

7,42	7,421 g	
kg	<u> </u>	

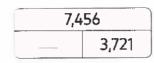
b.

mL		
56 mL		

e.

782	451

C.



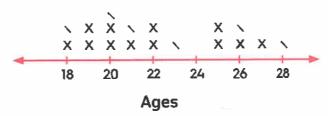
f.

920 cm	
m	cm

2. Use the line plot to answer the questions.

Players' ages of football team

Key x = 2 players



- a. What does this line plot show?
- **b.** What is the scale for this line plot?
- c. What does each x represent?
- d. How many players in the team are 20 years?
- e. How many players are represented in all?

3. Complete.

- a. The place value of the digit 8 in the number 3,856,421,912 is
- **b.** 700 cm = _____dm
- c. 5L+2,462 mL=____L, ____mL
- **d.** 3 weeks , 2 days = _____ days
- e. 751 + 21 = 21 + ____ [_____ property]
- f. The smallest 6-digit number is _____
- g. 3,000 dm = _____m

16

Till lesson 8 unit 3

1. Choose the correct answer.

A. 7

B. 70

C. 700

D. 7,000

A. 35

B. 350

C. 3,500

D. 35,000

c.
$$[7 \times 10,000] + [4 \times 1,000] + [5 \times 100] + [3 \times 10]$$

7.453

A. >

B. <

C. =

A. 526 kg

B. 526 g

C. 526 m

D. 526 mL

e. 3:40 + 30 minutes = _____

A. 4:10

B. 4:50

C. 3:20

D. 7:40

2. Ahmed bought 5 m, 50 cm of cloth, he made a trausers by 2 m, 25 cm. What is the length of the left cloth with him?

3. The mass of Mina is 43 kg, 450 g and the mass of Sara is 34 kg, 900 g What is the total mass of Mina and Sara?

4. Complete.

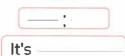


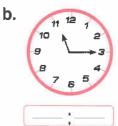
c. If
$$x = 342 = 741$$
, then $x = _____$

d.
$$78,000 \text{ cm} =$$
 m

5. Write the time in two ways.

11 12 1 10 9





	-:-	
l+'c		
10.5		

17

Till lesson 9 unit 3

1.	Choose	the	correct	answer
4.0	LIIOUSE	uic	COLLECT	allowel.

A. 10

B. 100

C. 1,000

D. 10,000

A. 835

B. 8,350

C. 8,035

D. 83,500

A. Thousand

B. Ten Million

C. Hundred Million

D. Milliard

A. 8:05

B. 6:45

C. 5:25

D. 6:25

A. 97

B. 970

C. 9,700

D. 97,000

2. Youssef studies 30 minutes every day. How many hours will he study in 6 days?

3. A tank with capacity of 70 liters is filled with 25,000 milliliters of water.

How many more liters of water are needed to fill it up completely?

4. Solve the problem using counting down using number line with decomposing strategy 785 – 462



a. 78,456 ≈

(to the nearest ten)

b. 3 L, 270 mL + 5 L, 980 mL = _____L, ____mL

c. If the total mass of 10 balls having the same mass is 120,000 grams, then the mass of each ball is _____ kg.

d. There is _____ mL of liquid in the opposite graduated cylinder.



on UNIT 4

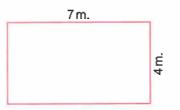
Cumulative Assessment

18

Till lesson 1 unit 4

1. Calculate the perimeter of each of the following shapes "Use two different formulas to solve each problem" show your work.

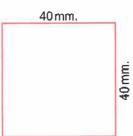
a.



First formula

Second formula

b.



First formula

Second formula

2. Complete:

- **b.** A rectangle of 12 m length and 8 m width , its perimeter is _____ m
- c. A square of side length 70 cm, its perimeter = _____cm

d.
$$mL = 5L,34mL$$

- 3. Shady is building a rectangle frame. Its length is 42 millimeters long, and its width is 32 millimeters. What will the perimeter of the frame be?
- 4. Compare Write (< , > or =).

a. 3 meters

300 cm

b. 7,456,291

330 thousand

c. 6L,500 mL

6,070 L

d. 4 weeks

30 days

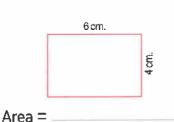
The perimeter of a square of side length 7 cm.

The perimeter of a rectangle whose length is 8 cm and width 6 cm.

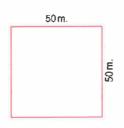
Till lesson 2 unit 4

1. Find the area and the perimeter of each of the following figures.

a.



b.



¢.

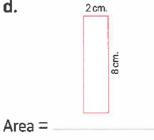


Perimeter =	
-------------	--

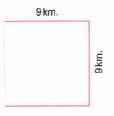
Alea –		
Perimeter	=	

Area = _

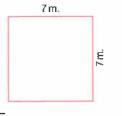
d.



ė.



f.



Area =

Area =

2. Subtract mentally. Use counting (Add to subtract) strategy. Show your steps.

3. Put (\checkmark) to the correct statement and (X) to the incorrect statement.

a. The perimeter of the square $= s \times s$

b. 3L,25 mL = 325 mL

c. The place value of the digit 8 in the number 7,856,462,941 is hundred million

d. The smallest 6-different digit number is 123456

- 4. Sketch two rectangles, the area of each one is 12 cm². Find the perimeter of each.

a.



P =

P =

Till lesson 3 unit 4

1. Complete each of the following.

- a. A square has a perimeter 24 cm, then its area is
- b. A square of area 25 cm², then its side length is
- c. The area of a rectangle is 32 m² and its length is 8 m, then its width is
- d. 3:25+6:42=
- e. $37,856 \approx$ [Round to the nearest 1,000]

Write the time in two ways.





Ċ.



d.



3. Compare : Write (< , > or =).

a. 372 + 5,482

lt's

- 9,462 3,781
- The side length of a square of perimeter 20 cm.
- The side length of a square of area 49 cm².
- c. The area of a rectangle of length 7 cm and width 8 cm
- The area of a square of side length 8 cm

d. 3 kg,720 g

2 kg, 20 g + 1 kg, 7 g

e. 13,700 tens

3,200 hundreds

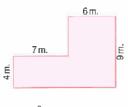
4. A rectangle of perimeter 20 cm. and its length is 6 cm. Find its area.

5. A colony of ants eats approximately 2,000 grams of food each day. If the ants have 10 kilograms of food stored, how many days will the food last?

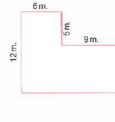
Till lesson 4 unit 4

1. Complete:

a. The perimeter of the opposite complex figure equals



- b. The area of the opposite complex figure equals _____m²
- **c.** 7,000 g = kg
- d. The value of the digit 5 in 5,321,647 is
- e. 75 dm = _____ m _ _ _ dm
- f. The value of the digit 0 in the number 769,423,018 is



Choose the correct answer :

- **a.** 59,764 < _
 - **A.** 59,000
- B. 49,999
- **C**. 59,765
- **D**. 59,763
- **b.** Hany wrote 325 + 0 = 325, using the property.
 - A. commutative B. associative C. additive identity
- D. distributive

- c. $[3 \times 1000] + [3 \times 10] =$
 - A. 330
- **B**. 3,030
- **C**. 3,300

- **D.** 30,030
- d. The perimeter of a rectangle with 7 cm long and 3 cm wide equal

- **A.** 21 cm
- **B.** 20 m
- **C.** 21 cm²

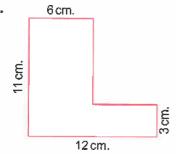
D. 20 cm

Find the result.

- a. 2,456 1,999
- b. 356 149

4. Find the area and the perimeter of these shapes.

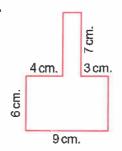
a.



Area = =

Perimeter =

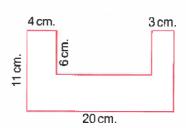
b.



Area = =

Perimeter = ---

C.



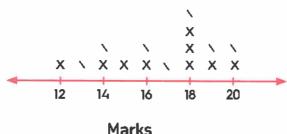
Area =

Perimeter =

5. Use the line plot to answer the following:

Marks of students in an exam

(Key) x = 2 students



- Marks
- a. What is the scale for this line plot?
- b. How many students got 16 marks?
- c. How many students got less than 14 marks?

Till lesson 1 unit 5

Choose the correct answer.

A. 6

B. 7

C. 8

D. 9

A. $8 \times 8 = 64$ **B.** $4 \times 8 = 32$

C. $6 \times 8 = 48$

D. $5 \times 8 = 40$

A. 7,921

B, 8,006

C. 6,997

D. 9,300

A. 3,124

B. 3,024

C. 1,243

D. 1.324

2. Complete.

b. The multiplicative comparison statement for

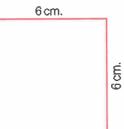
9 9 9 9 9 9 9 — is — times the number 9.

c. 4 days = _____ hours.

d. 10 + 10 + 10 + 10 = _____ -×_____=

3. Find the area and the perimeter of each of the following figures.

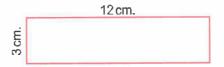
a.



Area = ___

Perimeter = _

b.



Area =

Perimeter = =

4. Compare, write the method you used.

a. 64 and 8 __

b. 36 and 4



Till lessons (2 & 3) unit 5

1. Write an equation for each comparison statement.

Use a letter to represent the unknown. Solve the equation.

a. A number is 6 times the number 5

b. 40 is 5 times a number.

c. 70 is how many times the number 10?

d. 36 is 6 times a number.

2. Solve.

a.
$$n=2\times8$$

b. $7 \times k = 49$

c. $b \times 9 = 72$

d. $3 \times 10 = a$

3. Choose the correct answer.

A. 800

B. 820

C. 720

D. 980

- **b.** If $z \times 8 = 32$, then z =______
 - A. 4
- **B**. 8

C. 2

D. 3

- c. 341 + 596 = _____
 - A. 837
- B. 997
- C. 937
- D. 255

- d. What number is 8 times the number 12?
 - A. 120
- **B**. 80
- C. 128
- D. 96

24

Till lessons (4 & 5) unit 5

1. Complete .

2. Choose the correct answer.

- **A.** 28
- **B.** 108
- **C**. 1,180
- **D**. 180

- **A.** 560
- **B**. 56
- **C.** 5,600
- **D.** 87

c.
$$5,000 \text{ m} =$$
_____ km.

- **A**. 50
- **B.** 500
- **C.** 55
- D. 5
- d. The perimeter of the rectangle with 8 cm long and 4 cm wide equals ————
 - **A**. 24
- **B**. 12
- **C**. 32
- **D**. 16

cm.

3. Put (<,> or =).

6 kg,550 g

1+258

c. 3×200

300 × 2

d. 8×6

6×8

- 4. Martin has 36 marbles. Write an equation using the commutative property of Multiplication to describe two ways he can arrange them.
- 5. Hany bought 4 mobiles, the price of each mobile is 3,000 pounds. How much did Hany pay?



Till lessons (7 & 8) unit 5

1. Solve each problem.

2. Complete.

Tens.

b. The time



$$d.80 =$$

$$\times 10$$

3. Use decomposing and the Associative Property of Multiplication to solve.

a.
$$8 \times 300 =$$

b.
$$5 \times 7,000 = -$$

4. Ayman has 5 bags, each bag has 8 packs of coloring pencils, if each pack has 6 coloring pencils. How many pencils Ayman has?

5. Choose the correct answer.

a.
$$7,000,000 + 800,000 + 3,000 + 60 =$$

(to the nearest ten)

d.
$$3,582 + 5,076 =$$

Cumu	lativa	Acce	seer	nani
Cumu	lative	Mage	, 331	IICIII

26

Till lessons (1 & 2) unit 6

1. Choose the correct answer.

- a. 4 is a factor of _____
 - A. 14
- **B.** 12
- **C**. 22
- D. 42

- **b**. 30 = 5 × ____
 - **A**. 6
- **B**. 5

C. 8

D. 7

- c. 48 is 6 times the number ——
 - **A.** 6
- **B**. 9

C. 7

D. 8

- d. _____ is a factor of 27.
 - A. 4
- **B.** 5

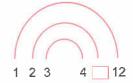
C. 9

- D. 10
- e. The missing factor in the factor rainbow is _____
 - **A**. 6

B. 12

C. 24

D. 36



2. Complete.

- a. All factors of 6 are
- **b.** is the only even prime number.
- c. 76 × 1,000 =
- d. The value of 8 in the number 387,064,100 is

3. Write.

- a. All the factors of 32
- b. All the factors of 23
- c. All the factors of 56
- d. All prime numbers between 20 and 40
- e. All composite numbers between 50 and 65

27

Till lesson 3 unit 6

1. Write the common factors of each pair of numbers.

- a. 12 and 28
- b. 30 and 42
- c. 19 and 8
- d. 45 and 27

2. Complete.

- a. GCF of 18 and 40 is ______
- **b**. 100 × 24 = _____
- c. [5 × 8] × 7 = _____ × ____ = ___
- **d.** GCF of 10 and 25 is ______

3. Bassem has 48 pens and 40 pencils, he wants to put them in packs so that each pack has the same number of pens and the same number of pencils. What is the greatest number of packs? What is the number of pens and pencils of each pack?

4. Choose the correct answer.

- a. The common factor of all numbers is _____
 - A. 1
- **B**. 0

C. 2

D. 10

- **b**. 38,265 m < _____
 - **A.** 38 km
- **B.** 38 km + 100 m
- **C.** 83 km
- **D**. 83 m

- c. 3 and 7 are factors of ______
 - A. 36
- **B**. 18
- C. 35
- D. 42

- d. 7+7+7+7=____
 - A. 4×7
- B. 7 + 4
- C. 7×7
- **D**. 7 + 7

	2.5		
Cumul	ative	Asse	ssment

Till lessons (4 & 5) unit 6

1.	Lis	t.						
	a.	. All multiples of 3 up to 30						
b.		All multiples of 9 up to 70						
	C.	All factors of 36						
	d.	Two common mu	ltiples of 2 and 5					
2.	Ch	oose the correct a	ınswer.					
	a.	38,294,182 rounde	d to the nearest Hur					
		A. 38,200,000	B . 30,000,000	C . 38,290,000	D . 38,300,000			
	b.	is a mu	ıltiple of 8.					
		A. 56	B. 42	C . 36	D. 18			
	c.	is not a	multiple of 6.					
		A. 36	B . 0	C . 26	D. 24			
	d.	0 is a common m	ultiple of					
		A. 10 and 8 only.	B. all numbers.	C. 6 and 9 only.	D. 4 and 5 only.			
3.			ming practice every t will go to his practic	five days of July , begine in July ?	nning July 5			
				:9::				
4.	W	rite the multiples	of 6 and 8 up to 50 ,t	hen write the commo	n multiples between them.			

29

Till lesson 6 unit 6

1. Complete.

a. 15 is a multiple of 5, then _____ is a factor of ____

c. 3 × 20 = ____ × 3

d. 280,000 = _____ Thousands.

2. Choose the correct answer.

a. 27 is a multiple of

A. 7

B. 9

C. 6

D. 2

b. 8 is a multiple of ____ and ____

A. 2,6

B. 4,12

C. 4,8

D. 8,16

c. If $5 \times a = 35$, then a = -

A. 7

B. 5

C. 6

D. 8

d. GCF of 36 and 24 is _______

A. 8

B. 12

C. 9

D. 6

3. a. The number is an even number, it is a multiple of 3 and 5 and lies between 20 and 40 What number is it?

b. The number is an odd number, it is a multiple of 3 and a factor of 18 and lies between 5 and 15. What number is it?

4. Find the relationship between the numbers in each group. Write at least two sentences describing the relationships.

a. 2,5 and 10

b. 4,6,12 and 30

30

Till lessons (1 & 2) unit 7

1. Solve.

- **a.** 5 × 73 ===
- **b.** 61 × 9
- c. 46 × 4 _
- d. 7 × 83 =

2. Complete.

- a. $4 \times 95 = [4 \times] + [4 \times]$
- **b.** 8 × 20 = ____ × 8 = ____
- c. $a \times 6 = 48$, then a =
- **d.** 2 × 1,730 = 2 × _____ + 2 × ____ + 2 × ____
- 3. Martin bought 7 packs of candies, each pack holds 45 candies. How many candies with Martin?

4. Choose the correct answer.

- a. The area model 8 represents
 - A. $[8 \times 60] + [8 \times 50]$

B. $[8 \times 60] + [8 \times 5]$

C. $[8 \times 6] + [8 \times 5]$

- **D**. $[8 \times 6] + [8 \times 50]$
- b. _____ is a factor of 42.
 - **A**. 3
- **B.** 12

C. 8

- D. 9
- c. The area model 7 490 42 equals ____
 - **A.** 532
- **B.** 523
- **C**. 530
- **D**. 352

- **d.** 28,325 19,742 = _____
 - A. 8,580
- **B**. 5,883
- C. 8,853
- D. 8,583

- 1. Solve using partial products algorithm.
 - a. 9×78

b. 642×4

- 2. Put (< , > or =).
 - a. $2 \times 6,381$
- 8 × 1,809
- b. 700 × 9

900×7

c. 6,300 g

6 kg,70 g

d. 5 × 413

4 × 508

- 3. Solve.
 - a. 87×6

b. 3 × 762

c. $5 \times 4,116$

d. 21,463 + 46,098

4. Complete.

- a. The value of the digit 5 in the number 354,621 is ____ —
- b. The perimeter of the square whose side length is 9 cm is _____cm.
- c. GCF of 28 and 42 is ———
- **d.** 7 × 1,280 = _____

- **e.** 7 kg = ____ grams.
- f. $6 \text{ m} 50 \text{ cm} = _$ cm

32

Till lessons (6 & 7) unit 7

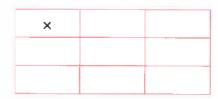
1. Choose the correct answer.

2. Create an area model to solve.

a.
$$37 \times 41$$



b.
$$93 \times 29$$



3. Complete.

b. If
$$6,426 + k = 10,384$$
, then $k =$ _____

c.
$$3 \times 32 = 32 \times 3$$
 the property used is

4. a. Dina bought 25 kg of mango and the price of 1 kg is 36 pounds. How much did Dina pay?

b. Write three numbers that round to 38,000

33

Till lesson 8 unit 7

1. Complete.

f.
$$5 \times 86 = [5 \times ...] + [5 \times 6]$$

2. Choose the correct answer.

d. ____ is a common multiple for 8,6

e. Three milliard in the standard form is ______

f.
$$[45 \times 20] + [45 \times ___] = 45 \times 28$$

3. Hany has a factory, his factory produces 75 toys every hour. How many toys does the factory produce in 12 hours?

4. A rectangular flowerbed in the city park has an area 15 square meters. The width of the flowerbed is 3 meters. What is the length of the flowerbed?



Till lesson 10 unit 7

1. Find the quotient and the remainder.

2. Complete.

3. Hany has 64 pounds, he wants to give the money to his three sons, how can he share the money equally? What is the remainder?

4. Choose the correct answer.

35

Till lesson 11 unit 7

1. Complete.

2. Choose the correct answer.

- A. 6
- **B**. 60
- **C**. 7

D. 8

- A. 600
- B. 60
- **C**. 6

D. 6,000

- **A.** 216 cm
- **B.** 216 cm²
- **C.** 126 cm²
- **D.** 126 cm

d. hundreds
$$\div$$
 4 tens = 5 tens

- A. 200
- **B**. 20
- **C**. 2

D. 2,000

3. There are 320 tourists want to be seated in 8 buses. How many tourists are in each bus?

4. Use the pattern and place value to find the quotient.

36

Till lesson 12 unit 7

1. Use the area model to solve each of the following.



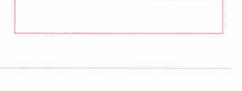


b.
$$75 \div 5$$



c.
$$74 \div 4$$





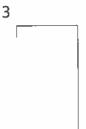
2. Solve:

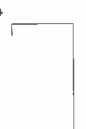
3. Choose the correct answer.



Till lessons (13 & 14) unit 7

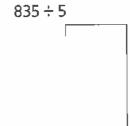
1. Divide using partial quotient algorithm.







Divide using standard division algorithm.







3. Complete.

a.
$$\div 3 = 54$$

d. ______ is a common multiple of all numbers.

4. Match.

c.
$$[3 \times 80] + [3 \times 6]$$

Till lesson 15 unit 7

1. Choose the correct answer.

a. If
$$73 \times 8 = 584$$
, then $584 \div 8 =$

A. 78

B. 73

C. 83

D. 87

b. In the problem
$$3,467 \div 5$$
, the quotient is between

___ and ____

B. 300,400

C. 600,800

D. 1,000,2,000

A. 9

B. 8

C. 7

D. 6

d.
$$4,120 \div 4 =$$

A. 1,300

B. 1,003

C. 1,030

D. 103

A. 1,622

B. 1,880

C. 1,088

D. 1,808

2. Complete.

b.
$$922 \div 3 =$$

e. If
$$641 \times 7 = 4{,}487$$
, then $4{,}487 \div 7 =$

f. The value of the digit 3 in 1,372,006,541 is

3. Amal has 358 L.E. She divided the money between her 2 children, what is the share of each one?

4. Write the division problem that matches the multiplication problem.

a.
$$421 \times 6 =$$

= 768

c.
$$652 \times 8 = 5,216$$

d.
$$578 \times 4 = 2{,}312$$

on UNIT 8

Cumulative Assessment

39

Till lessons (2 to 4) unit 8

1. Find the value of each of the following.

b.
$$8 + [12 - 5] \times 3 =$$

f.
$$4 \times 6 \div 8 + 7 =$$

2. Complete.

a.
$$36 - [4 + 2] \times 5 = ...$$

c.
$$3+15 \div 3+5=$$

e.
$$[5 \times 1,000,000] + [8 \times 1,000] + [4 \times 10] =$$

f.
$$4,369 \approx$$
 [to the nearest 100]

3. Choose the correct answer.

a.
$$30 \div 6 + 9 - 4 =$$

b.
$$320 \text{ hundreds} = -$$
 thousands.

c.
$$51 + 17 + 69 + 63 =$$

d.
$$3 \times 9 - [10 - 3] \times 2 =$$

e.
$$30 \div 6 + 4 - 2 \times 3 =$$

f.
$$18 - x = 6$$
, then $x =$

4. A group of 330 tourists wants to travel to Luxor, 154 tourists will take the train, the rest will take microbuses, each microbus holds 8 seats.
How many microbuses will be needed?

Directorates Exams

Cairo Governorate

Heliopolis Educational Zone Mathematics Inspection



Choose the correct answer :

$$a. * 3.570 \div 3 =$$

2. Complete:

a.
$$3,000 - B = 2,000$$
, then the value of B =

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a.* The following area model represents
$$87 \div 4 = 21 R 3$$

$$4 \boxed{4 \times 20 = 80 \mid 4 \times 1 = 4}$$

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	[B]
a. 600,000 + 5,000 + 212 =	650,021,000
b. A square whose side is 5 cm, then its perimeter = cm	120
c. 7 liters, 150 milliliters = 780 milliliters = milliliters.	20
d. Standard form of a number (six hundred fifty million and twenty-one thousand) is	605,212
e. A school with 300 students in the fourth grade of primary school, if the number of boys is 180, then the number of girls = girls	

5. Answer the following questions:

- a. Samir and Mohamed participated in a project. Samir paid 342,650 pounds. If the cost of the project is 668,500 pounds a how much did Mohamed pay?
- **b.** Rectangular gymnasium 7 meters long and 4 meters wide. Find its perimeter.

		_
	Khalifa and Mokattem E. Zone Mathematics Guidance	抽
-		

2 Cairo Governorate

1. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a. The GCF of 20 and 30 is 4 ()

b. Rounding the number: 8,532 to the nearest 1,000 is approximately 8,000 (

c. * When we divide 35 by 6 the quotient is 6 and the remainder is 5

2. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	(B)
a. A school with 300 students in the fourth grade of primary school $_{2}$ if the number of boys is 180 $_{2}$ then the number of girls = $_{2}$ girl.	20
b. A square whose side is 5 cm. , then its perimeter — cm	5,000
c. The value of the digit 5 in the numeral 4,125,081 is	120

_		
3.	Complete	3
ur.	Activity of the	8

a. _____ is the only even prime number.

b. * The divisor in $384 \div 8 = 48$ is _____

4. Choose the correct answer:

a. A rectangle its length is (l) and its width is (w), what is its perimeter ———

A. L+ w

B. L×w

C. $2 \times [l + w]$

D. $[2 \times l] + w$

b. Which is NOT a common multiple of 9 and 6

A. 36

B. 54

C. 27

D. 18

c.1 day and 5 hours =

hours.

A. 29

B. 65

C. 15

D. 35

d.13 + 0 = 13, is

A. Associative Property

B. Commutative Property

C. Additive Identity Property

D. None of the above

e. * What is the first step of solving $12 + 30 \div 6$?

A. 12 + 30

B. 12 ÷ 6

C. 30 ÷ 6

D. 12 + 6

5. Answer the following questions:

- **a.** A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?
- **b.** Twenty-two passengers can fit on each river bus at a time. What is the maximum number of passengers the river bus can carry if it makes 5 trips?

Giza Governorate	Dokki Educational Directorate Maths Inspection

1.	Choose	the	correct	answer	
4.0	LHOUSE		CULLECT	aliswei	

a. * Using the followin	g area	model	,
the quotient equals			

- A. 230
- **B**. 302
- **C**. 203
- D. 7
- **b.** A rectangle its length = 8 cm \rightarrow its width = 4 cm \rightarrow then its area = cm².
 - **A.** 32
- **B.** 12
- C. 24
- D. 64
- c. The population of a country is 56,724,033, then the place value of the digit 6 is in -
 - A. Thousand.

B. Hundred Thousand.

C. Millions.

D. Ten Million.

- d.13 + 0 = 13, is
 - **A.** Associative Property
- B. Commutative Property
- **C.** Additive Identity Property
- D. none of the above

2. Complete:

- a. 650 mm = _____ cm
- **b.** The standard form of the numeral: three million, two hundred fourteen thousand, nine hundred thirty-six is —

3. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	(B)
a.5 minutes = seconds.	102
b. 15 kg = — g	300
c.17 × 6 =	15,000

4. Put (1) for the correct statement and (X) for the incorrect statement	4.	Put (/) for	the correct	statement	and (X)	for the	incorrect	statement.
--	----	--------	-------	-------------	-----------	-----------	---------	-----------	------------

a. * $214 \div 5 = 43 R 4$ (

b. 3 is a factor of 12 ()

c. The multiplication equation of 5 + 5 + 5 is $5 \times 5 = 15$ ()

5. Answer the following questions:

- a. Find: the GCF of 25 and 35
- **b.** A road of 675 km. length. If a train traveled a distance of 239 km from this road. What is the remaining distance of the road.

4	Giza Governorate	6 th October Educational Directorate Maths Inspection	
		Directorate maths inspection	~~~~

1. Choose the correct answer:

- a. A rectangle its length = 8 cm, its width = 4 cm, its area = --- cm²
 - A. 32
- **B**. 12

- C. 24
- D. 64

- **b.** 13 liters and 30 ml = _____ ml.
 - **A.** 1,330
- **B.** 13,030
- **C**. 43
- **D.** 3,013

- c. 45 is times the number 5
 - A. 9
- **B**. 6

C. 5

- D. 40
- d. What is the unknown value in the area model of 17×40 ?
 - **A**. 70
- **B.** 140
- C. 210
- D. 17

30 10 10 300 100 7 210 ?

2. Complete:

- a. The standard form of the numeral: Three million, two hundred fourteen thousand, nine hundred thirty-six is
- b. * When we divide 126 by 4, the remainder is —
- c. is the common factor for all numbers.

3. Put (/) for the correct statement and (X) for the incorrect statement.

 $a.*5+6-2\times2=9$

(

b. The area of a square if its side length is $7 \text{ cm} = 49 \text{ cm}^2$

()

c. The property: $5 \times 8 = 8 \times 5$ called Commutative Property.

()

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	(B)
a. A factor of 20 is	55
b. The additive identity is	10
c. A multiple of 11 is	0

5. Answer the following questions:

- a. Ayman ate 4 figs in the morning. His older brother ate 3 times as many. How many figs did his brother eat?
- b. Write all factors of the number 24, decide if the number is a prime or composite?

5 Alexandria Governorate

West Educational Administration Maths Inspection



1. Choose the correct answer:

- a. Which number is the greatest common factor [GCF] of 12 and 6?
 - A. 2
- **B.** 3

C. 6

- D. 12
- **b.** Using the relationship between units of length: Choose the correct answer to complete of the following table:

Kilometer	meter	Centimeter
60	6,000	?

- A. 600
- B. 6,000
- C. 60,000
- **D**. 6,000,000

- c. * Which of the following equals 9?
 - **A.** $25 \div 5 + 4$
- **B.** 25 10 4
- $C.3 \times 3 + 2$
- $D.8 2 \times 3 + 1$

2. Complete:

- **a.** A rectangle has 4 cm. width, and 6 cm. length, then its area = -cm.
- b. The smallest odd prime number is ————
- 3. Put (/) for the correct statement and (X) for the incorrect statement.

a. 1 dm. = 10 cm.

(

b. $(5 \times 1) + (8 \times 1,000) + (4 \times 10,000) + (1 \times 10,000) = 1,485$

(

c. The prime number 5 the sum of its factors is 6

()

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	[B]
a. A factor of 20 is	35
b . The additive identity is	10
c. A multiple of 11 is	300
d.5 weeks = days.	0
e. 5 minutes =seconds.	55

5. Answer the following questions :

- a. *There are 64 children in the park. They want to make teams with 8 children in each team. How many teams they will make?
- b. Write all factors of the number 24, decide if the number is a prime or composite?

6 El-Kalyoubia Governorate

Maths Supervision



1. Choose the correct answer:

a. Which of the following represents the commutative property in addition?

A.
$$635 + 492 = 492 + 635$$

B.
$$0 + 847 = 847$$

C.
$$[18 + 2] + 16 = 36$$

$$D. 1 + 131 = 132$$

b.
$$*5 + 3 \times [6 + 1] =$$

d. Which number is the greatest common factor (GCF) of 12 and 6?

2. Complete:

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a. The common factor of all numbers is 1

()

b. * The first step of solving $30 - 3 \times 8 + 2$ is subtracting

()

c. Any number that ends in 0 has a factor of 2,5 and 10

()

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

	(A)	(B)
a. A square whose si	de length is 5 cm., then its perimeter = cm.	650,021,000
b. The number	is equal to 10 times the number 75	20
c. Standard form of a thousand is	number: six hundred fifty million and twenty-one	750

5. Answer the following questions:

- a. A square picture with a side length of 8 cm. Hussein wants to make a piece of glass to cover this picture, what is the area of the glass piece?
- **b.** There are 6 people who won 145 pounds each at the fair. How much money did they win all together?

7 El-Sharkia Governorate

Dirab Nagm Educational Administration
Mathematics Inspection



1. Choose the correct answer:

a. Which equation would be best to include in an explanation of the commutative property of multiplication?

A.
$$3 \times 1 = 3$$

B.
$$9 \times 6 = 6 \times 9$$

C.
$$6 \times [2 \times 4] = [6 \times 2] \times 4$$

D.
$$5 \times 16 = [5 \times 11] + [5 \times 5]$$

- c. * If we divided a number by 4, the quotient is 15 and the remainder is 3
 - , then the number is -
 - **A.** 18
- **B**. 63
- **C**. 22
- D. 49

2. Complete:

a. is the additive identity element.

b. *
$$10 + 6 \div 2 = ----$$

c.
$$m = 350 \, dm$$
.

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

 a. The milliard is the small 	llest number	made up of 10	different digits.
--	--------------	---------------	-------------------

(,

-1			

c. A piece of wallpaper its dimensions are 4 m, and 6 m Can this piece be used to cover a wall its dimensions 3 m, and 8 m?

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

	(A)	(B)
a. The number	is equal to 10 times the number 750	102
b. Mona drank 4 liter to ———	s of water, the amount she drank in milliliters is equal	7,500
c.17 × 6 =		4,000

5. Answer the following questions:

- a. Write the common factors of 12 and 18, deduce the greatest common factor [GCF].
- **b.** A bridge of ants consists of 142 ants, and another bridge consists of 165 ants. How many ants are there in the two bridges together?
- **c.** Basma bought a two-liters bottle of milk. She drank 1,200 milliliters from the bottle. How many milliliters of milk are left?

R El-Monofia Governorate

Quesna Educational Directorate Maths Supervision



1. Choose the correct answer:

- **a.** 13 + 0 = 13, is the _____ property.
 - A. associative.
- B. commutative.
- C. additive identity.
- D. none of the above.

- **b**. 423 cm =
 - A. 23 m, 4 cm.
- B. 2 m, 3 cm
- C. 4 m, 23 cm
- D. 3 m, 42 cm

- **c.** * 734 ÷ 3 = ---
 - A. 24 R 2
- **B**. 240
- C. 244

D. 244 R 2

2. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a. 3 tens and 9 ones = 10×390

- ()
- **b.** * Dina distributed 80 stickers among 5 of her friends, then each one will take 20 stickers.
- ()

c. The area of a square with side length 7 cm = 49 cm^2

()

3. Complete:

- $a. *7 + 12 \times 4 + 6 =$
- **b.** A number that has only two factors and their sum of 8 is

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	[B]
a. 6 × 17	102
b. The greatest number formed from [4,3,2,5,9]	500,000
c. Hanaa said that 5,000 hundreds =	95,432

5. Answer the following questions :

- a. The country has provided a vaccination against the corona virus. In the first stage, 1,653,465 people were vaccinated and 3,312,447 were vaccinated in the second stage. What is the total number of people vaccinated in both stages?
- **b.** Samir and Mohamed participated in a project , Samir paid 342,650 pounds if the cost of the project is 668,500 pounds how much is Mohamed paying?
- c. A square picture with a side length 8 cm. Hussein wants to make a piece of glass to cover this picture, what is the area of the glass piece?

General Service Ser

Samanoud Educational Directorate Mathematics Inspection



1. Choose the correct answer:

- a.1 day and 5 hours = hours.
 - A. 29
- **B**. 65
- **C**. 15

D. 35

- b. * The dividend in 658 ÷ 6 = 109 R 4 is
 - **A.** 658
- B. 6

C. 109

- D. 4
- c. What is the standard form of eighteen million, six hundred five thousand?
 - A. 18,605,000
- **B**. 81,605,000
- **C.** 1,860,500
- **D**. 18,650,000

2. Complete:

- $a. * 63 \div 7 + 3 =$
- **b.** The value of the digit 6 in 61,230,478 is
- c. The value of the symbol H in the equation H 1,590 = 3,410 is

3. Put (/) for the correct statement and (X) for the incorrect statement.

a. 800 thousands = 8 millions

(

b. $4 \times 3,000 = 4 \times 3 \times 100$

()

c.6 times of 5 = 25

()

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	(B)
a. 15 kg =g	5,000
b. The value of the digit 5 in the numeral 4,125,081 is————	4,200,000
c. 420 × 10 =	1
d. 25 hundred thousands <	15,000
e. 4,000 – 3,999 = —	4,200

5. Answer the following questions:

- **a.** A road of 675 km length. If a train traveled a distance of 239 km from this road. What is the remaining distance of the road?
- b. * Seliem placed 32 bottles of juice on 8 tables equally.
 How many bottles of juice on each table?

10 El-Dakahlia Gove<u>rnorate</u>

Mathematics Supervision



1. Complete:

a. In the corresponding bar model

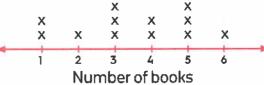
The value of the unknown K =

ŀ	<
2515	4370

- **b.** In the equation: $32 \div 8 = 4$, the dividend is ______, the divisor is _____ and the quotient is _____
- c. The common factor of all numbers is
- d.32 L ,77 mL = ---- mL

2. Answer the following questions:

- a. A road of 768 km length. If a train traveled a distance of 328 km from this road, what is the remaining distance of the road?
- b. The key of a line plot indicates that each X = 2 children. How many students read 5 books yesterday?



3. Choose from column (B) suitable for columan (A):

(A)	(B)
a. A multiple of 11 is	40
b. 6 weeks = —— days.	28
c. A number equal 8 times of the number 5 is	33
d. A perimeter of square of side length is 7 cm = cm	42

4. Choose the correct answer:

- a. The number in standard form 138 million , 802 thousand , 341 is _____
 - A. 138,000,802,341

B. 183,802,562

C. 138,802,341

D. 138,820,341

b. 6,325 gm = ----

A. 6,000 kg +352 gm

B. 63 kg , 25 gm

C. 60 kg ,325 gm

D. 6 kg ,325 gm

c. The prime number has — factors only.

A. 0

B. 1

C. 2

D. 4

d. Area of rectangle with length 9 cm and width 6 cm = - cm²

A. 3

B. 30

C. 15

D. 54

e. * Which of the following equals 24?

A. $3 \times 3 + 5$

B. 120 ÷ 5

C. 6×6

D. $8 + 16 \div 8$

11 Ismailia Governorate

Maths's Supervision



1. Choose the correct answer:

- a. The capacity of a juice can is 1 liter and 500 ml, then its capacity in milliliters = — ml.
 - A. 150
- **B.** 1,500
- **C.** 15,000
- **D.** 1,005
- **b.** Which of the following represents the commutative property in addition?
 - **A.** 635 + 492 = 492 + 635

B. 0 + 847 = 847

C. [18 + 2] + 16 = 36

- **D.** 1 + 131 = 132
- c. Which digit can be placed in the square to make the mathematical expression is correct? $6,201,351 > 6,20 \square,351$
 - **A.** 0
- B. 1

C. 2

D. 3

- **d. * 2**,385 ÷ 3 = _____
 - A. 795
- **B.** 975
- C. 759
- D. 597

2. Complete:

- a. The value of the digit 6 in 61,230,478 is
- c. 48 × 12 = 12 ×

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a. The area of a square its side length is $7 \text{ cm} = 49 \text{ cm}^2$

()

b. $1 \, \text{dm} = 10 \, \text{cm}$

()

c. $*16 \times [18 - 8] + 6 = 158$

()

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	(B)
a. A factor of 20 is	35
b. The additive identity is	10
c. 5 weeks = days.	0

5. Answer the following questions:

- a. Find the GCF of 30 and 45
- **b.** There are 6 people who won 145 pounds each at the fair. How much money did they win all together?

Suez Governorate





d	Chaaca	élac	correct	SPEWOR	
1	Choose	tne	correct	answer	4

a.	List	all	the	factor:	s of 16
----	------	-----	-----	---------	---------

A. 1,16

B. 2,4,8

C. 1,2,4,8,16

D. 1,2,4,6,8,16

b. There are 4 bicycles on a road, and 14 times as many cars as bicycles. How many cars are on the road?

A. 46

B. 14

C. 56

D. 18

c. Which answer represents rounding 32,582,346 to the nearest million?

A. 30,000,000

B. 32,600,000

C. 32,000,000

D. 33,000,000

d. Adel spends 6 hours at school. If we want to calculate Adel's school day in minutes, we :

A. add 6 with 60

B. add 6 with 24

C. multiply 6 by 60

D. multiply 6 by 24

2. Complete:

$$a, *40 \div 4 - 3 =$$

b. A week, and two days = ——— days.

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a. Area of rectangle (A) = length (L) + width (W)

()

b. The property: $5 \times 8 = 8 \times 5$ is called commutative property.

(

c. The common multiple for all numbers is one.

()

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	(B)
a. 700 tens = hundreds	5,040
b. The smallest odd prime number is	70
c.1,008 × 5 =	3

5	2	An even	number	between	20 :	and 30	some	of its	factors	include
	a.	Allevell	Halline	Deracell	200	and Jo	SOLLIC	01163	Idetois	HICKGGC

1,2,4,7 and 14. What is it?

_The number is _

b. Hany paints pictures and sells them at art shows. He charges 56 L.E. for a picture.
 Find the total price for 15 pictures.

13 Port Said Governorate

Maths Supervision



1. Choose the correct answer:

a.
$$*30-5 \times [7-4] = -$$

c. Round 6,749,001,551 to the nearest milliard =

2. Complete:

d. * In the following area model 8
$$8 \times 200 = 1,600$$
 $8 \times 7 = 56$

The quotient equals — 200 7

3. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	(B)
a. The common factor of all numbers is	3
b. The smallest odd prime number is	420
c. 21 × 20 =	490
d. In the opposite bar model the value of b is 750 260 b	1

4. Answer the following questions:

- **a.** List the following numbers in a descending order: 900 thousands, 9 millions, 5 millions and 7 hundred thousands, 550, 223
- **b.** There are 6 people who won 145 pounds each at the fair. How much money did they win all together?
- c. An even number between 20 and 30 some of its factors include 1, 2, 4, 7 and 14 Which number is it?

14 Damietta Governorate

Maths Supervision



1. Choose the correct answer:

a. Which of the following represents the Commutative Property in addition?

A. 635 + 492 = 492 + 635

B. 0 + 847 = 847

C. [18 + 2] + 16 = 36

D. 1 + 131 = 132

b. The number 1 milliard, 235 million and 127 in standard form =

A. 1,235,000,127

B. 1,272,351

C. 1,235,127

D. 1,235,127,000

c. A rectangle of length equal to 20 cm. and width equal to 10 cm, then its area is equal to _____ square cm.

A. $2 \times 20 + 2 \times 10$

B. 20 + 10

C. 60

D. 200

d. st 52 pounds distributed equally among 6 friends, then the remainder is -

—pounds.

A. 2

B. 4

C. 3

D. 5

2. Complete:

a. In the corresponding bar model : the value of the unknown C = -

7,620 C 4.310

- b. * 32 ÷ 4 6 = —
- c. The Additive Identity element is _____
- d. The numbers 1, 3, 9, 27 are all factors of _____

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

 $a.60 \times 40 > 1.600$

()

b. The place value of the number 5 in the number: 9,008,527,314 is Hundred Thousands.

c. The subtraction is a commutative process.

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	(B)
a. Maha saves 10 pounds of her expenses every day. How much does she save per week?	25,000
b. The number 25 million = thousand.	4,000
c. Mona drank 4 liters of water, the amount she drank in milliliters is equal to	70

5. Answer the following questions:

- a. There are 6 people who won 145 pounds each at the fair. How much money did they win all together?
- b. * Ayman saved 484 L.E. to buy a toy, he did this by saving 4 L.E. every day. How many days were needed to save this amount of money?

15 Kafr El-Sheikh Governorate

El-Hamol Educational Zone Maths Supervision



4	Chaoca	tho	corroct	answer	
Т.	Choose	tne	correct	answer	

a.	The capa	icity of a	juice can is	1 liter and 500 ml	then its capac	city in milliliters = -	ml.
----	----------	------------	--------------	--------------------	----------------	-------------------------	-----

A. 150

B. 1,500

C. 15,000

D. 1,005

b. A rectangle its length is (l) and its width is (w), what is its perimeter?

A.l+w

B. L×w

C. $2 \times [l + w]$

D. $[2 \times l] + w$

c. $18 \div 3 + 4 - 2 = -$

A. 8

B. 16

C. 2

D. 0

2. Complete:

a. 4 minutes and 20 seconds = seconds.

b. * 4,000 ÷ 4 = ---

c. 284,615 = 106,392 =

3. Put (\checkmark) for the correct statement and (X) for the incorrect statement.

a.6,514 < 1 + 20 + 400 + 30,000

(

b. To convert 50 millimeters in centimeters, we multiply by 10

()

c. 2 dm = 6 mm < 206 mm

1 1

4. Match each paragraph from the column (A) to what is appropriate from the column (B):

	(A)	(B)
ais a f	factor of 20	35
b. The additive ide	entity is	10
c. A multiple of 11 i	S	300
d. 5 weeks =	days	0
e.5 minutes =	seconds	55

5. The country has provided a vaccination against the Corona virus. In the first stage 1,653,465 people were vaccinated and 3,312,447 in the second stage. What is the total number of people vaccinated in both stages?

El-Beheira Governorate

Kafr Al-Dawar Center Managment



1. Choose the correct answer:

- a. 2 days and 2 hours = ——— hours.
 - A. 22

B. 4

- C. 62
- D. 50

- b. $35 \times 0 = -$
 - **A**. 0

B. 35

- **C**. 350
- **D.** 305

- c. * Which is the first step when solving: $27 12 \div 3$?
 - A. 27 12
- **B.** 12 3
- **C.** $12 \div 3$
- **D**. $27 \div 3$
- d. Which number is the greatest common factor [GCF] of 12 and 6?
 - **A**. 2

B. 3

C. 6

D. 12

- e. Which partial products can be to solve (35×6) ?

 - **A.** $[3 \times 6] \times [50 \times 6]$ **B.** $[30 \times 6] \times [50 \times 6]$ **C.** $[30 \times 6] + [5 \times 6]$ **D.** $[3 \times 6] + [5 \times 6]$

2. Complete:

- a. * The quotient in $6,300 \div 7$ is
- b. The smallest odd prime number is __
- is the common factor for all numbers.
- d. A number that has only two factors and their sum is 8, then the number is
- e. The numbers 1, 3, 9, 27 are all factors of $_$

3. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	[B]
a. The value of the digit 7 in the number 270, 150, 081 is	28
b. 342,000 + 358,000 =	70,000
c. Number equal 7 times of the number 4 is	700,000
d. Maha saves 10 pounds of her expenses every day. How much does she save per week?	70,000,000
e. 700 hundreds =	70

17 El-Fayoum Governorate

Maths Supervision



1. Choose the correct answer:

a. The expanded form of the numeral 7, 215, 603 is _____

A.
$$3 + 60 + 5,000 + 10,000 + 200,000 + 7,000,000$$

B.
$$3 + 60 + 500 + 1,000 + 20,000 + 700,000$$

C.
$$3 + 600 + 5{,}000 + 10{,}000 + 200{,}000 + 7{,}000{,}000$$

D.
$$3 + 600 + 5,000 + 1,000 + 200,000 + 7,000,000$$

b. Which of the following represents the Commutative Property in addition?

A.
$$635 + 492 = 492 + 635$$

B.
$$0 + 847 = 847$$

C.
$$[18 + 2] + 16 = 36$$

D.
$$1 + 131 = 132$$

c. * Hany bought 9 pens for 108 L.E. , then the price of each pen equals

----L.E.

- A. 9
- **B**. 12

B. 20 + 1

C. 14

- **D**. 15
- d. A rectangle of length equal to 20 cm and width equal to 10 cm, then its area is equal

A.
$$2 \times 20 + 2 \times 10$$

2. Complete:

b. * The place value of the digit 2 in the number 5,200,000 is

С.	lf	853	_ A =	= 751	•the	value	of A	_	
Sec. 5	FI	~~	-7.1	101	7 (11)	VULU C	Q171		

3. Match each paragraph from the column (A) to what is appropriate from the column (B):

(A)	(B)
a. A prime number between 30 and 35 is	744
b. The common multiples of 6 and 8 are	9 hundred
c. 124 × 6 =	24
d. = 2 × 450	1
e. The identity of multiplication is	31

4. Answer the following questions:

- a. Rectangular gymnasium of 7 meters long and 4 meters wide. Find its perimeter.
- **b.** There are 6 people who won 145 pounds each at the fair. How much money did they win all together?

Beni Suef Governorate

Administration of Governmental Language Schools



300

0

55

4					_	_	
1	Choose	tha	CORROCT	SHOWAR	From	thaca	divon
40	CHOOSE	VI IC	COLLECT	al 13 WEL	31 OH	いにつて	HIVELI

1.	Choose the correct	answer from these	given :			
	a. Adel spends 6 hou	rs at school. If we wa	ant to calculate Adel's s	school day in minu	tes,	
	A. add 6 with 60		B. add 6 with 24			
	C. multiply 6 by 60)	D. multiply 6 by 24	4		
	b. $9 + 2 \times [15 \div 5] = -$					
	A . 15	B. 21	C. 11	D. 18		
	c. A rectangle its leng	gth is (l) and its widt	h is (w) , what is its per	rimeter?		
	A . l + w	B. l×w	C. $2 \times [1 + w]$	D. $[2 \times l] + w$		
	d. The list of all the fa	actors of 16 is ———				
	A . 1,16	B. 2,4,8	C. 1,2,4,8,16	D. 1,2,4,6,8	,16	
	e. Which answer repr	resents rounding 32	,582,346 , to the neare:	st million ?		
	A. 30,000,000	B . 32,600,000	C . 32,000,000	D . 33,000,000		
2.	Put (√) for the corr a. All factors of 6 are 3 b. 80 meters • 90 cen c. 6,514 < 1 + 20 + 400	2,3,6 timeters = 8,900 cei	(X) for the incorrect s	tatement.	()
3.	Complete : a. 550 ÷ 5 =					
	b . The length of the s	side of a square who	se perimeter is 28 cm	iscm		
4.	Match each paragra	ph from the columr	n (A) to what is approp	oriate from the co	lumn (I	B) :
		(A)			[B]	
	a. is a fac	ctor of 20			35	
2.	b. The additive iden	tity is			10	

5. * Amgad has 84 stickers, he distributed them equally among 7 of his friends. What is the share of each one?

days.

seconds.

c. A multiple of 11 is

d.5 weeks =

e.5 minutes = -

19 El-Minia Governorate

Samalot Educational Zone Maths Supervision



4	Choose	the	correct	angwar	
ш.	LITOUSE	une	COLLECT	answei	4

	÷1		225				
a.	The number 1	milliard ,	235 millior	1 and 12/1	n standard for	m =	

$$d.35 \times 0 =$$

2. Complete:

b. The number of factors of the prime numbers is _____

c. *The dividend in 124
$$\div$$
 4 = 31 is

3. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	[B]
a. 1 5 kg =g	5,000
b. The value of the digit 5 in the numeral 4,125,081, is	4,200,000
c. 420 × 10 =	1
d. 2,500,000 <	15,000
e. 4,000 – 3,999 =	4,200

4. Put (✓) for the correct statement and (X) for the incorrect statement.

$$a.85 \div 6 = 15 R 5$$

5. List the following lengths in an ascending order: 8 m, 8000 cm, 8 km, 8 mm

20

Souhag Governorate

Maths Inspection



1. Choose the correct answer:

a. The rectangle its length is [l] and its width is [w], what is perimeter?

C.
$$2 \times [l + w]$$

D.
$$[2 \times l] + w$$

b.1 day and 5 hours = ——— hours.

c. 45 is — times the number 5

2. Complete:

a. The value of the digit 6 in 61,230,478 is ————

b. In the opposite bar model the value of b =	
--	--

k)	7
9901	1000	

3. Match each paragraph from the column (A) to what is appropriate from the column (B):

[A]	(B)
a. The common factor for all numbers is	15,000
b. The smallest odd prime number is	5
c. 15 kg = g	1
d. 600,000 + 5000 + 212 =	3
e. A rectangle with an area of 20 square meters and width of 4 meters its length is ——meters.	605,212

4. Answer the following questions:

- a. Find the G.C.F. of the two numbers 30 and 45
- **b.** A square-shaped room has a side length 4 meters.

What is the area of the ground of the room in square meters?